```
=> d his nofile

     (FILE 'HOME' ENTERED AT 09:52:22 ON 21 NOV 2006)

     FILE 'HCAPLUS' ENTERED AT 09:52:35 ON 21 NOV 2006
                E US2005-532447/APPS
L1              1 SEA ABB=ON  PLU=ON  US2005-532447/AP
                E WO2003-EP12584/APPS
L2              1 SEA ABB=ON  PLU=ON  (WO2003-EP12584/AP OR WO2003-EP12584/PRN)
L3              1 SEA ABB=ON  PLU=ON  (L1 OR L2)
                D SCAN

     FILE 'REGISTRY' ENTERED AT 09:53:43 ON 21 NOV 2006
                E TRIIODOTHYRONINE SULFATE/CN
L4              1 SEA ABB=ON  PLU=ON  "TRIIODOTHYRONINE SULFATE"/CN
                D BROWSE

     FILE 'REGISTRY' ENTERED AT 09:54:27 ON 21 NOV 2006
L5              STR 31135-55-4
L6              3 SEA FAM FUL L5
                D SCAN
L7              0 SEA ABB=ON  PLU=ON  31135-55-4/CRN

     FILE 'HCAPLUS' ENTERED AT 09:55:10 ON 21 NOV 2006
L8             90 SEA ABB=ON  PLU=ON  L6
                E TRIIODOTHYRONINE SULFATE/CT
L9             61 SEA ABB=ON  PLU=ON  TRIIODOTHYRONINE SULFATE?
L10             6 SEA ABB=ON  PLU=ON  L6 (L) (THU OR PKT OR DMA OR PAC OR
                BAC)/RL
                D KWIC

     FILE 'STNGUIDE' ENTERED AT 09:57:04 ON 21 NOV 2006

     FILE 'HCAPLUS' ENTERED AT 09:57:42 ON 21 NOV 2006
                E HYPOTHYROIDISM/CT
                E E3+ALL
L11          6796 SEA ABB=ON  PLU=ON  HYPOTHYROIDISM/CT
                E HYPOTHYROIDISM/CT
                E E4+ALL
L12           363 SEA ABB=ON  PLU=ON  "HYPOTHYROIDISM (L) CONGENITAL"/CT
                E HYPOTHYROIDISM/CT
                E E5+ALL
L13           231 SEA ABB=ON  PLU=ON  "HYPOTHYROIDISM (L) CRETINISM"+OLD/CT
                E HYPOTHYROIDISM/CT
                E E6+ALL
L14           568 SEA ABB=ON  PLU=ON  "HYPOTHYROIDISM (L) MYXEDEMA"+OLD/CT
                E HYPOTHYROIDISM/CT
                E E7+ALL
                E THYROID GLAND/CT
                E E3+ALL
L15         37088 SEA ABB=ON  PLU=ON  "THYROID GLAND"+OLD/CT
                E THYROID GLAND/CT
                E E9+ALL
                E E2+ALL
L16          2460 SEA ABB=ON  PLU=ON  "AUTOIMMUNE DISEASE (L) THYROID"+OLD/CT
                E E11+ALL
                E THYROID GLAND/CT
                E E9+ALL
                E E3+ALL
L17          2433 SEA ABB=ON  PLU=ON  "THYROID GLAND, DISEASE (L) AUTOIMMUNE"+OLD
```

```
                /CT
                E THYROID GLAND/CT
                E E10+ALL
                E E2+ALL
L18          1718 SEA ABB=ON  PLU=ON  "AUTOIMMUNE DISEASE (L) AUTOIMMUNE
                THYROIDITIS"+OLD/CT
                E THYROID GLAND/CT
                E E10+ALL
                E E3+ALL
L19          1718 SEA ABB=ON  PLU=ON  "INFLAMMATION (L) AUTOIMMUNE THYROIDITIS"+O
                LD/CT
                E THYROID GLAND/CT
                E E10+ALL
                E E4+ALL
L20          1718 SEA ABB=ON  PLU=ON  "THYROID GLAND, DISEASE (L) AUTOIMMUNE
                THYROIDITIS"+OLD/CT
                E THYROID GLAND/CT
                E E11+ALL
                E E2+ALL
L21          2460 SEA ABB=ON  PLU=ON  "AUTOIMMUNE DISEASE (L) THYROID"+OLD/CT
                E THYROID GLAND/CT
                E E11+ALL
                E E3+ALL
L22          2433 SEA ABB=ON  PLU=ON  "THYROID GLAND, DISEASE (L) AUTOIMMUNE"+OLD
                /CT
                E THYROID GLAND/CT
                E E26+ALL
                E THYROIDECTOMY/CT
                E E3+ALL
                E E2+ALL
L23          1578 SEA ABB=ON  PLU=ON  "SURGERY (L) THYROIDECTOMY"+OLD/CT
                E THYROIDECTOMY/CT
                E E3+ALL
                E E3+ALL
L24          1595 SEA ABB=ON  PLU=ON  "THYROID GLAND (L) THYROIDECTOMY"+OLD/CT
L*** DEL    86497 S (HYPOTHYROID? OR THYROID?)
L*** DEL       67 S L11-L25 AND L8-L10
                D KWIC
L*** DEL    11987 S HYPOTHYROID?
L25         11987 SEA ABB=ON  PLU=ON  HYPOTHYROID?
L26         15484 SEA ABB=ON  PLU=ON  (THYROID?) (L) (DISEASE? OR DISORDER? OR
                DYSFUNCTION? OR AUTOIMMUN?)
L27            22 SEA ABB=ON  PLU=ON  (L8 OR L9 OR L10) AND (L11 OR L12 OR L13
                OR L14 OR L15 OR L16 OR L17 OR L18 OR L19 OR L20 OR L21 OR L22
                OR L23 OR L24 OR L25 OR L26)
                D KWIC
                D KWIC 2
                D KWIC 3
                D KWIC 4
                D KWIC 5
                D KWIC 6
                D KWIC 7
                D KWIC 8
                D KWIC 9
                D KWIC 10
L28            24 SEA ABB=ON  PLU=ON  (L27 OR L10)
L29            24 SEA ABB=ON  PLU=ON  (L28 OR L3)
L30            23 SEA ABB=ON  PLU=ON  L29 NOT L3
L31       2145712 SEA ABB=ON  PLU=ON  PHARMAC?/SC,SX
L32            11 SEA ABB=ON  PLU=ON  L31 AND (L8 OR L9 OR L10)
```

```
                D KWIC
L33             4 SEA ABB=ON  PLU=ON  L32 AND (L11 OR L12 OR L13 OR L14 OR L15
                  OR L16 OR L17 OR L18 OR L19 OR L20 OR L21 OR L22 OR L23 OR L24
                  OR L25 OR L26)
L34            31 SEA ABB=ON  PLU=ON  (L32 OR L33 OR L30)
L35            30 SEA ABB=ON  PLU=ON  L34 NOT L3
                D SCAN TI
                E PINCHERA A/AU
L36           271 SEA ABB=ON  PLU=ON  ("PINCHERA A"/AU OR "PINCHERA ALDO"/AU)
                E SANTINI F/AU
L37           106 SEA ABB=ON  PLU=ON  ("SANTINI F"/AU OR "SANTINI F G"/AU OR
                  "SANTINI F J"/AU OR "SANTINI FERRUCCIO"/AU OR "SANTINI
                  FERRUCIO"/AU)
L38            23 SEA ABB=ON  PLU=ON  L36 AND L37
L39            30 SEA ABB=ON  PLU=ON  L35 NOT L38

     FILE 'MEDLINE' ENTERED AT 10:12:24 ON 21 NOV 2006
L40            31 SEA ABB=ON  PLU=ON  L6
                E TRIIODOTHYRONINE SULFATE/CT
L41            35 SEA ABB=ON  PLU=ON  TRIIODOTHYRONINE SULFATE?
                E HYPOTHYROIDISM/CT
                E E3+ALL
L42         23512 SEA ABB=ON  PLU=ON  HYPOTHYROIDISM+NT/CT
                E THYROID GLAND/CT
                E E3+ALL
L43         40322 SEA ABB=ON  PLU=ON  "THYROID GLAND"/CT
                E THYROID GLAND/CT
L44         37881 SEA ABB=ON  PLU=ON  (THYROID?) (L) (DISEASE? OR DISORDER? OR
                  DYSFUNCTION? OR AUTOIMMUN?)
L45         27381 SEA ABB=ON  PLU=ON  HYPOTHYROID?
                E THYROIDECTOMY/CT
                E E3+ALL
L46         12721 SEA ABB=ON  PLU=ON  THYROIDECTOMY/CT
L47         15323 SEA ABB=ON  PLU=ON  THYROIDECTOMY?
L48            11 SEA ABB=ON  PLU=ON  (L40 OR L41) AND (L42 OR L43 OR L44 OR L45
                  OR L46 OR L47)
                D KWIC
                D KWIC 2
                D KWIC 3
                D KWIC 4
                D KWIC 5
                D KWIC 6
                D KWIC 7
                E DRUG COMPOSITIONS/CT
                E PHARMACUETICALS/CT
L49             0 SEA ABB=ON  PLU=ON  (L40 OR L41) (L) TU/CT
L50       1251950 SEA ABB=ON  PLU=ON  TU/CT
L51             2 SEA ABB=ON  PLU=ON  L50 AND (L40 OR L41)
                D KWIC
L52            17 SEA ABB=ON  PLU=ON  (PK OR PD)/CT AND (L40 OR L41)
                D KWIC
                D KWIC 2
L53             4 SEA ABB=ON  PLU=ON  L52 AND (L42 OR L43 OR L44 OR L45 OR L46
                  OR L47)
L54            12 SEA ABB=ON  PLU=ON  (L53 OR L51 OR L48)
L55            13 SEA ABB=ON  PLU=ON  L52 NOT L54
                D KWIC
                D KWIC 2
                D KWIC 3
                D KWIC 4
```

```
L56           0 SEA ABB=ON  PLU=ON  L55 AND (PY<2003 AND AY<2003 OR PRY<2003)

     FILE 'EMBASE' ENTERED AT 10:22:10 ON 21 NOV 2006
L57           0 SEA ABB=ON  PLU=ON  L6
                E TRIIODOTHYRONINE SULFATE/CT
L58          23 SEA ABB=ON  PLU=ON  TRIIODOTHYRONINE SULFATE?
L59       28070 SEA ABB=ON  PLU=ON  (THYROID?) (L) (DISEASE? OR DISORDER? OR
                DYSFUNCTION? OR AUTOIMMUN?)
L60       10321 SEA ABB=ON  PLU=ON  THYROIDECTOMY?
L61       24179 SEA ABB=ON  PLU=ON  HYPOTHYROID?
L62           7 SEA ABB=ON  PLU=ON  L58 AND (L59 OR L60 OR L61)
                D KWIC
L63           0 SEA ABB=ON  PLU=ON  L62 AND (PY<2003 AND AY<2003 OR PRY<2003)
                D BIB 1-7
                D BIB 1-7 L62
                E HYPOTHYROID/CT
                E THYROID GLAND/CT
                E E3+ALL
L64       12996 SEA ABB=ON  PLU=ON  "THYROID GLAND"/CT
L65       17379 SEA ABB=ON  PLU=ON  "THYROID GLAND"+NT/CT
                E THYROIDECTOMY/CT
                E E3+ALL
L66        8213 SEA ABB=ON  PLU=ON  THYROIDECTOMY/CT
                E THYROIDECTOMY/CT
                E E4+ALL
                E E2+ALL
L67         905 SEA ABB=ON  PLU=ON  "SUBTOTAL THYROIDECTOMY"/CT
L68           2 SEA ABB=ON  PLU=ON  L58 AND (L66 OR L67)
L69           7 SEA ABB=ON  PLU=ON  (L68 OR L62)

     FILE 'MEDLINE' ENTERED AT 10:25:37 ON 21 NOV 2006
                D BIB L55 1-13
                D SCAN L55
                D TRIAL L55
                D TRIAL L55 2
                D TRIAL L55 3
                D TRIAL L55 4
                D TRIAL L55 5
                D TRIAL L55 6
                D TRIAL L55 7
                D TRIAL L55 8
                D TRIAL L55 9
                D TRIAL L55 10

     FILE 'BIOSIS' ENTERED AT 10:29:08 ON 21 NOV 2006
L70          18 SEA ABB=ON  PLU=ON  L6
L71          35 SEA ABB=ON  PLU=ON  TRIIODOTHYRONINE SULFATE?
L72       35193 SEA ABB=ON  PLU=ON  (THYROID?) (L) (DISEASE? OR DISORDER? OR
                DYSFUNCTION? OR AUTOIMMUN?)
L73       16164 SEA ABB=ON  PLU=ON  HYPOTHYROID?
L74        5577 SEA ABB=ON  PLU=ON  THYROIDECTOMY?
L75           9 SEA ABB=ON  PLU=ON  (L70 OR L71) AND (L72 OR L73 OR L74)
                D KWIC
                D KWIC 2

     FILE 'WPIX' ENTERED AT 10:31:21 ON 21 NOV 2006
L76           0 SEA SSS SAM L5
                E TRIIODOTHYRONINE SULFATE/CN
L77           1 SEA ABB=ON  PLU=ON  "TRIIODOTHYRONINE SULFATE"/CN
                D TOT SDCN DCSE
```

```
L78             1 SEA ABB=ON  PLU=ON  RAEEDH/DCN
L79             0 SEA ABB=ON  PLU=ON  908404-1-0-0/DCRE
L80             2 SEA ABB=ON  PLU=ON  TRIIODOTHYRONINE SULFATE?/BIX
L81             2 SEA ABB=ON  PLU=ON  TRIIODOTHYRONINE SULFATE?/BIX,ABEX
L82             3 SEA ABB=ON  PLU=ON  (L76 OR L77 OR L78 OR L79 OR L80 OR L81)
L83          5624 SEA ABB=ON  PLU=ON  ((THYROID?) (L) (DISEASE? OR DISORDER? OR
                  DYSFUNCTION? OR AUTOIMMUN?))/BIX,ABEX
L84           648 SEA ABB=ON  PLU=ON  HYPOTHYROID?/BIX,ABEX
L85            18 SEA ABB=ON  PLU=ON  THYROIDECTOMY?/BIX,ABEX
L86             2 SEA ABB=ON  PLU=ON  L82 AND (L83 OR L84 OR L85)

     FILE 'STNGUIDE' ENTERED AT 10:34:16 ON 21 NOV 2006

     FILE 'HCAPLUS, MEDLINE, EMBASE, BIOSIS, WPIX' ENTERED AT 10:34:30 ON 21
     NOV 2006
L87            41 DUP REM L35 L54 L69 L75 L86 (19 DUPLICATES REMOVED)
                      ANSWERS '1-30' FROM FILE HCAPLUS
                      ANSWERS '31-37' FROM FILE MEDLINE
                      ANSWER '38' FROM FILE EMBASE
                      ANSWERS '39-40' FROM FILE BIOSIS
                      ANSWER '41' FROM FILE WPIX

=> file hcaplus
FILE 'HCAPLUS' ENTERED AT 10:34:51 ON 21 NOV 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)


Copyright of the articles to which records in this database refer is
held by the publishers listed in the PUBLISHER (PB) field (available
for records published or updated in Chemical Abstracts after December
26, 1996), unless otherwise indicated in the original publications.
The CA Lexicon is the copyrighted intellectual property of the
the American Chemical Society and is provided to assist you in searching
databases on STN.  Any dissemination, distribution, copying, or storing
of this information, without the prior written consent of CAS, is
strictly prohibited.

FILE COVERS 1907 - 21 Nov 2006  VOL 145 ISS 22
FILE LAST UPDATED: 20 Nov 2006  (20061120/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> file medline
FILE 'MEDLINE' ENTERED AT 10:34:54 ON 21 NOV 2006

 FILE LAST UPDATED: 15 Nov 2006 (20061115/UP).  FILE COVERS 1950 TO DATE.

 On December 11, 2005, the 2006 MeSH terms were loaded.

 The MEDLINE reload for 2006 is now (26 Feb.) available.  For details
 on the 2006 reload, enter HELP RLOAD at an arrow prompt (=>).
 See also:

    http://www.nlm.nih.gov/mesh/
    http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html
```

http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_med_data_changes.html
http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_2006_MeSH.html

OLDMEDLINE is covered back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2006 vocabulary.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> file embase
FILE 'EMBASE' ENTERED AT 10:34:56 ON 21 NOV 2006
Copyright (c) 2006 Elsevier B.V. All rights reserved.

FILE COVERS 1974 TO 20 Nov 2006 (20061120/ED)

EMBASE has been reloaded. Enter HELP RLOAD for details.

EMBASE is now updated daily. SDI frequency remains weekly (default) and biweekly.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> file biosis
FILE 'BIOSIS' ENTERED AT 10:34:57 ON 21 NOV 2006
Copyright (c) 2006 The Thomson Corporation

FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 15 November 2006 (20061115/ED)

=> file wpix
FILE 'WPIX' ENTERED AT 10:35:00 ON 21 NOV 2006
COPYRIGHT (C) 2006 THE THOMSON CORPORATION

FILE LAST UPDATED: 20 NOV 2006 <20061120/UP>
MOST RECENT THOMSON SCIENTIFIC UPDATE: 200674 <200674/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> YOU ARE IN THE NEW AND ENHANCED DERWENT WORLD PATENTS INDEX <<<

>>> FOR DETAILS ON THE NEW AND ENHANCED DERWENT WORLD PATENTS INDEX PLEASE VISIT:
http://www.stn-international.de/stndatabases/details/dwpi_r.html <<<

FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE, PLEASE VISIT:
http://www.stn-international.de/training_center/patents/stn_guide.pdf

FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE
http://scientific.thomson.com/support/patents/coverage/latestupdates/

PLEASE BE AWARE OF THE NEW IPC REFORM IN 2006, SEE
http://www.stn-international.de/stndatabases/details/ipc_reform.html and

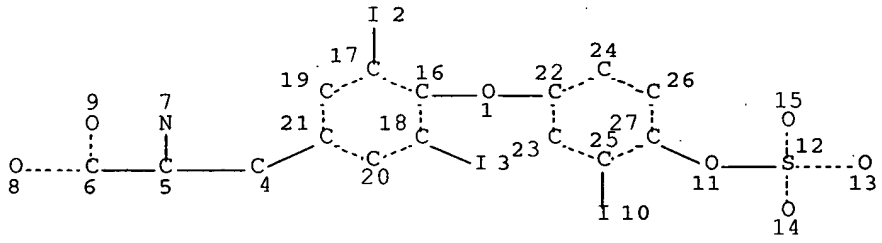
http://scientific.thomson.com/media/scpdf/ipcrdwpi.pdf

>>> FOR DETAILS ON THE NEW AND ENHANCED DERWENT WORLD PATENTS INDEX
PLEASE SEE
http://www.stn-international.de/stndatabases/details/dwpi_r.html <<<

>>> YOU ARE IN THE NEW AND ENHANCED DERWENT WORLD PATENTS INDEX <<<
'BIX' IS DEFAULT SEARCH FIELD FOR 'WPIX' FILE

=> d que l38
L36 271 SEA FILE=HCAPLUS ABB=ON PLU=ON ("PINCHERA A"/AU OR "PINCHERA ALDO"/AU)
L37 106 SEA FILE=HCAPLUS ABB=ON PLU=ON ("SANTINI F"/AU OR "SANTINI F G"/AU OR "SANTINI F J"/AU OR "SANTINI FERRUCCIO"/AU OR "SANTINI FERRUCIO"/AU)
L38 23 SEA FILE=HCAPLUS ABB=ON PLU=ON L36 AND L37

=> d que l35
L1 1 SEA FILE=HCAPLUS ABB=ON PLU=ON US2005-532447/AP
L2 1 SEA FILE=HCAPLUS ABB=ON PLU=ON (WO2003-EP12584/AP OR WO2003-EP12584/PRN)
L3 1 SEA FILE=HCAPLUS ABB=ON PLU=ON (L1 OR L2)
L5 STR



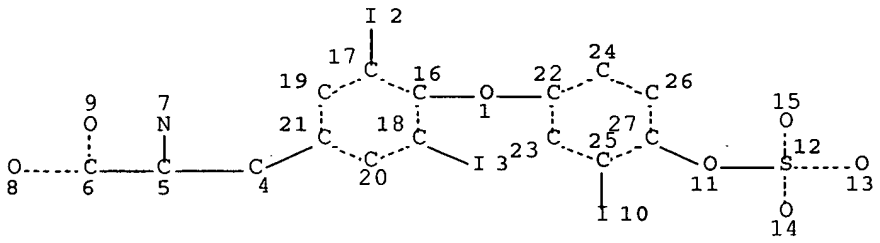
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 27

STEREO ATTRIBUTES: NONE
L6 3 SEA FILE=REGISTRY FAM FUL L5
L8 90 SEA FILE=HCAPLUS ABB=ON PLU=ON L6
L9 61 SEA FILE=HCAPLUS ABB=ON PLU=ON TRIIODOTHYRONINE SULFATE?
L10 6 SEA FILE=HCAPLUS ABB=ON PLU=ON L6 (L) (THU OR PKT OR DMA OR PAC OR BAC)/RL
L11 6796 SEA FILE=HCAPLUS ABB=ON PLU=ON HYPOTHYROIDISM/CT
L12 363 SEA FILE=HCAPLUS ABB=ON PLU=ON "HYPOTHYROIDISM (L) CONGENITAL "/CT
L13 231 SEA FILE=HCAPLUS ABB=ON PLU=ON "HYPOTHYROIDISM (L) CRETINISM" +OLD/CT
L14 568 SEA FILE=HCAPLUS ABB=ON PLU=ON "HYPOTHYROIDISM (L) MYXEDEMA"+ OLD/CT

```
L15        37088 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "THYROID GLAND"+OLD/CT
L16         2460 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "AUTOIMMUNE DISEASE (L)
                 THYROID"+OLD/CT
L17         2433 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "THYROID GLAND, DISEASE (L)
                 AUTOIMMUNE"+OLD/CT
L18         1718 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "AUTOIMMUNE DISEASE (L)
                 AUTOIMMUNE THYROIDITIS"+OLD/CT
L19         1718 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "INFLAMMATION (L) AUTOIMMUNE
                 THYROIDITIS"+OLD/CT
L20         1718 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "THYROID GLAND, DISEASE (L)
                 AUTOIMMUNE THYROIDITIS"+OLD/CT
L21         2460 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "AUTOIMMUNE DISEASE (L)
                 THYROID"+OLD/CT
L22         2433 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "THYROID GLAND, DISEASE (L)
                 AUTOIMMUNE"+OLD/CT
L23         1578 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "SURGERY (L) THYROIDECTOMY"+OL
                 D/CT
L24         1595 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "THYROID GLAND (L) THYROIDECTO
                 MY"+OLD/CT
L25        11987 SEA FILE=HCAPLUS ABB=ON  PLU=ON  HYPOTHYROID?
L26        15484 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (THYROID?) (L) (DISEASE? OR
                 DISORDER? OR DYSFUNCTION? OR AUTOIMMUN?)
L27           22 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L8 OR L9 OR L10) AND (L11 OR
                 L12 OR L13 OR L14 OR L15 OR L16 OR L17 OR L18 OR L19 OR L20 OR
                 L21 OR L22 OR L23 OR L24 OR L25 OR L26)
L28           24 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L27 OR L10)
L29           24 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L28 OR L3)
L30           23 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L29 NOT L3
L31      2145712 SEA FILE=HCAPLUS ABB=ON  PLU=ON  PHARMAC?/SC,SX
L32           11 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L31 AND (L8 OR L9 OR L10)
L33            4 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L32 AND (L11 OR L12 OR L13 OR
                 L14 OR L15 OR L16 OR L17 OR L18 OR L19 OR L20 OR L21 OR L22 OR
                 L23 OR L24 OR L25 OR L26)
L34           31 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L32 OR L33 OR L30)
L35           30 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L34 NOT L3


=> d que l54
L5                STR
```



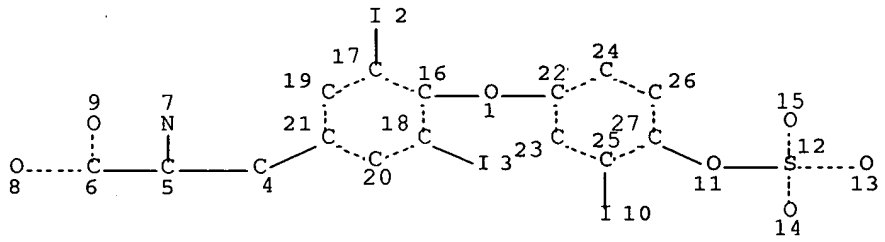

```
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  27
```

```
STEREO ATTRIBUTES: NONE
L6             3 SEA FILE=REGISTRY FAM FUL L5
L40           31 SEA FILE=MEDLINE ABB=ON  PLU=ON  L6
L41           35 SEA FILE=MEDLINE ABB=ON  PLU=ON  TRIIODOTHYRONINE SULFATE?
L42        23512 SEA FILE=MEDLINE ABB=ON  PLU=ON  HYPOTHYROIDISM+NT/CT
L43        40322 SEA FILE=MEDLINE ABB=ON  PLU=ON  "THYROID GLAND"/CT
L44        37881 SEA FILE=MEDLINE ABB=ON  PLU=ON  (THYROID?) (L) (DISEASE? OR
                 DISORDER? OR DYSFUNCTION? OR AUTOIMMUN?)
L45        27381 SEA FILE=MEDLINE ABB=ON  PLU=ON  HYPOTHYROID?
L46        12721 SEA FILE=MEDLINE ABB=ON  PLU=ON  THYROIDECTOMY/CT
L47        15323 SEA FILE=MEDLINE ABB=ON  PLU=ON  THYROIDECTOMY?
L48           11 SEA FILE=MEDLINE ABB=ON  PLU=ON  (L40 OR L41) AND (L42 OR L43
                 OR L44 OR L45 OR L46 OR L47)
L50      1251950 SEA FILE=MEDLINE ABB=ON  PLU=ON  TU/CT
L51            2 SEA FILE=MEDLINE ABB=ON  PLU=ON  L50 AND (L40 OR L41)
L52           17 SEA FILE=MEDLINE ABB=ON  PLU=ON  (PK OR PD)/CT AND (L40 OR
                 L41)
L53            4 SEA FILE=MEDLINE ABB=ON  PLU=ON  L52 AND (L42 OR L43 OR L44 OR
                 L45 OR L46 OR L47)
L54           12 SEA FILE=MEDLINE ABB=ON  PLU=ON  (L53 OR L51 OR L48)


=> d que l69
L58           23 SEA FILE=EMBASE ABB=ON  PLU=ON  TRIIODOTHYRONINE SULFATE?
L59        28070 SEA FILE=EMBASE ABB=ON  PLU=ON  (THYROID?) (L) (DISEASE? OR
                 DISORDER? OR DYSFUNCTION? OR AUTOIMMUN?)
L60        10321 SEA FILE=EMBASE ABB=ON  PLU=ON  THYROIDECTOMY?
L61        24179 SEA FILE=EMBASE ABB=ON  PLU=ON  HYPOTHYROID?
L62            7 SEA FILE=EMBASE ABB=ON  PLU=ON  L58 AND (L59 OR L60 OR L61)
L66         8213 SEA FILE=EMBASE ABB=ON  PLU=ON  THYROIDECTOMY/CT
L67          905 SEA FILE=EMBASE ABB=ON  PLU=ON  "SUBTOTAL THYROIDECTOMY"/CT
L68            2 SEA FILE=EMBASE ABB=ON  PLU=ON  L58 AND (L66 OR L67)
L69            7 SEA FILE=EMBASE ABB=ON  PLU=ON  (L68 OR L62)


=> d que l75
L5             STR
```



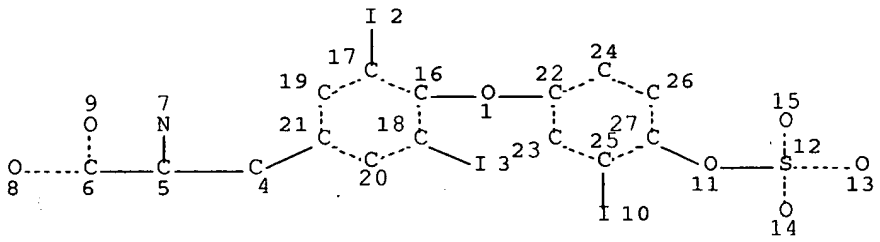

```
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  27

STEREO ATTRIBUTES: NONE
L6             3 SEA FILE=REGISTRY FAM FUL L5
```

```
L70           18 SEA FILE=BIOSIS ABB=ON  PLU=ON  L6
L71           35 SEA FILE=BIOSIS ABB=ON  PLU=ON  TRIIODOTHYRONINE SULFATE?
L72        35193 SEA FILE=BIOSIS ABB=ON  PLU=ON  (THYROID?) (L) (DISEASE? OR
                 DISORDER? OR DYSFUNCTION? OR AUTOIMMUN?)
L73        16164 SEA FILE=BIOSIS ABB=ON  PLU=ON  HYPOTHYROID?
L74         5577 SEA FILE=BIOSIS ABB=ON  PLU=ON  THYROIDECTOMY?
L75            9 SEA FILE=BIOSIS ABB=ON  PLU=ON  (L70 OR L71) AND (L72 OR L73
                 OR L74)


=> d que l86
L5                STR
```



```
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  27

STEREO ATTRIBUTES: NONE
L76            0 SEA FILE=WPIX SSS SAM L5
L77            1 SEA FILE=WPIX ABB=ON  PLU=ON  "TRIIODOTHYRONINE SULFATE"/CN
L78            1 SEA FILE=WPIX ABB=ON  PLU=ON  RAEEDH/DCN
L79            0 SEA FILE=WPIX ABB=ON  PLU=ON  908404-1-0-0/DCRE
L80            2 SEA FILE=WPIX ABB=ON  PLU=ON  TRIIODOTHYRONINE SULFATE?/BIX
L81            2 SEA FILE=WPIX ABB=ON  PLU=ON  TRIIODOTHYRONINE SULFATE?/BIX,ABE
                 X
L82            3 SEA FILE=WPIX ABB=ON  PLU=ON  (L76 OR L77 OR L78 OR L79 OR L80
                 OR L81)
L83         5624 SEA FILE=WPIX ABB=ON  PLU=ON  ((THYROID?) (L) (DISEASE? OR
                 DISORDER? OR DYSFUNCTION? OR AUTOIMMUN?))/BIX,ABEX
L84          648 SEA FILE=WPIX ABB=ON  PLU=ON  HYPOTHYROID?/BIX,ABEX
L85           18 SEA FILE=WPIX ABB=ON  PLU=ON  THYROIDECTOMY?/BIX,ABEX
L86            2 SEA FILE=WPIX ABB=ON  PLU=ON  L82 AND (L83 OR L84 OR L85)


=> dup rem l38,l35,l54,l69,l75,l86
FILE 'HCAPLUS' ENTERED AT 10:35:39 ON 21 NOV 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'MEDLINE' ENTERED AT 10:35:39 ON 21 NOV 2006

FILE 'EMBASE' ENTERED AT 10:35:39 ON 21 NOV 2006
Copyright (c) 2006 Elsevier B.V. All rights reserved.
```

```
FILE 'BIOSIS' ENTERED AT 10:35:39 ON 21 NOV 2006
Copyright (c) 2006 The Thomson Corporation

FILE 'WPIX' ENTERED AT 10:35:39 ON 21 NOV 2006
COPYRIGHT (C) 2006 THE THOMSON CORPORATION
PROCESSING COMPLETED FOR L38
PROCESSING COMPLETED FOR L35
PROCESSING COMPLETED FOR L54
PROCESSING COMPLETED FOR L69
PROCESSING COMPLETED FOR L75
PROCESSING COMPLETED FOR L86
L88          63 DUP REM L38 L35 L54 L69 L75 L86 (20 DUPLICATES REMOVED)
                ANSWERS '1-53' FROM FILE HCAPLUS
                ANSWERS '54-60' FROM FILE MEDLINE
                ANSWER '61' FROM FILE EMBASE
                ANSWERS '62-63' FROM FILE BIOSIS

=> d ibib abs hitind retable l88 1-53;d iall l88 54-63

L88  ANSWER 1 OF 63  HCAPLUS  COPYRIGHT 2006 ACS on STN DUPLICATE 1
ACCESSION NUMBER:         2004:430742  HCAPLUS  Full-text
DOCUMENT NUMBER:          140:412353
TITLE:                    3,5,3'-tri-iodothyronine sulfate as thyromimetic agent
                          and pharmaceutical formulations thereof
INVENTOR(S):              Pinchera, Aldo; Santini, Ferruccio
PATENT ASSIGNEE(S):       Bracco S.p.A., Italy
SOURCE:                   PCT Int. Appl., 17 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.          KIND   DATE        APPLICATION NO.          DATE
     ---------------     ----   --------    --------------------     --------
     WO 2004043452        A1    20040527    WO 2003-EP12584          20031111
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
             PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,
             TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
             BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,
             ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
             TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
     AU 2003292006        A1    20040603    AU 2003-292006           20031111
     EP 1560575           A1    20050810    EP 2003-767529           20031111
     EP 1560575           B1    20060927
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
     CN 1711079           A     20051221    CN 2003-80103057         20031111
     JP 2006508956        T2    20060316    JP 2004-550983           20031111
     AT 340570            E     20061015    AT 2003-767529           20031111
     US 2005272816        A1    20051208    US 2005-532447           20050422
PRIORITY APPLN. INFO.:                       IT 2002-MI2394      A    20021113
                                             WO 2003-EP12584     W    20031111
AB   The invention regards the use of tri-iodothyronine sulfate, commonly named
     T3S, as a medicament having thyromimetic activity for the treatment of
```

pathologies due to organic deficiency of triiodothyronine (T3), as such or in association with thyroxine (T4), and pharmaceutical formulations thereof.

IC ICM A61K031-198
ICS A61P005-14

CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 2

RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Chopra, I | 1996 | 6 | 229 | THYROID 1996 UNITED | MEDLINE |
| Santini, F | 1993 | 133 | 105 | ENDOCRINOLOGY | HCAPLUS |

L88 ANSWER 2 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 2002:90345 HCAPLUS Full-text
DOCUMENT NUMBER: 136:145560
TITLE: Method for diagnosing thyroid conditions and for monitoring thyroxine therapy
INVENTOR(S): Salhanick, Hilton A.; Hourihan, Joachim
PATENT ASSIGNEE(S): Biodiagnostics, Inc., USA
SOURCE: PCT Int. Appl., 114 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2002008759 | A1 | 20020131 | WO 2001-US23593 | 20010726 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| EP 1307741 | A1 | 20030507 | EP 2001-955988 | 20010726 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | | |

PRIORITY APPLN. INFO.: US 2000-220894P P 20000726
WO 2001-US23593 W 20010726

AB This invention provides a method of diagnosing a thyroid condition in a subject which comprises: determining the concentration of TSH in a urine sample by a method which is not a RIA; and comparing the concentration of TSH with a urinary concentration of TSH in a normal subject; wherein: a concentration of TSH which is higher than the urinary concentration of TSH in the normal subject diagnoses ***hypothyroidism*** in the subject; and a concentration of TSH which is lower than the urinary concentration of TSH in the normal subject diagnoses hyperthyroidism in the subject. This invention also proves a method of monitoring thyroxine therapy.

IC ICM G01N033-53
ICS G01N033-566

CC 2-1 (Mammalian Hormones)
Section cross-reference(s): 14

ST ***thyroid*** gland ***disease*** diagnosis thyroxine treatment monitoring assay kit

IT Colorimetric indicators

Diagnosis
Enzyme immunoassay
Fluorescent indicators
Human
Hyperthyroidism
***Hypothyroidism***
Immobilization, molecular or cellular
Polarized fluorescence
***Thyroid gland, disease***
Urine analysis
(method for diagnosing ***thyroid*** conditions and for monitoring thyroxine therapy by measurement of ***thyroid*** gland hormones/thyroxine levels utilizing non-RIA assay systems and/or kits)

IT 6893-02-3, Triiodothyronine 9002-71-5, TSH 21462-56-6, Thyroxine glucuronide 29919-72-0, Triiodothyronine glucuronide ***31135-55-4***, ***Triiodothyronine sulfate*** 77074-49-8, Thyroxine sulfate
RL: BSU (Biological study, unclassified); ***THU (Therapeutic use)***; BIOL (Biological study); USES (Uses)
(method for diagnosing thyroid conditions and for monitoring thyroxine therapy by measurement of thyroid gland hormones/thyroxine levels utilizing non-RIA assay systems and/or kits)

RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Aghini-Lombardi | 1999 | 84 | | Journal Of Clinical | HCAPLUS |
| Black | 1981 | 2 | 443 | Lancet | HCAPLUS |
| Knudsen | 1999 | 51 | 361 | Clinical Endocrinolo | MEDLINE |
| Premachandra | 1982 | 78 | 63 | American Journal Of | MEDLINE |
| Wu | 1997 | | | US 5670380 A | HCAPLUS |

L88 ANSWER 3 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 1998:377674 HCAPLUS Full-text
DOCUMENT NUMBER: 129:145038
TITLE: Urinary compound W in pregnant women is a potential marker for fetal thyroid function
AUTHOR(S): Wu, Sing-Yung; Fisher, Delbert A.; Huang, Wen-Sheng; Beck-Peccoz, Paolo; Emerson, Charles H.; Kuo, Shi-Wen; Chen, Wei-Lian
CORPORATE SOURCE: Veterans Administration Medical Center, the Perinatal Laboratory, Nuclear Medicine and Medical Services, Los Angeles, CA, USA
SOURCE: American Journal of Obstetrics and Gynecology (1998), 178(5), 886-891
CODEN: AJOGAH; ISSN: 0002-9378
PUBLISHER: Mosby, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Previously the authors reported 3,3'-diiodothyronine sulfate-like material (compound W) in maternal serum, and studies suggest that compound W is derived from thyroid hormones of fetal origin. In this study the authors characterized gestational changes of urinary compound W concns. to correlate with changes in serum concns. Urinary samples were collected from 94 women at various gestational ages ranging from 3 to 40 wk. Urinary compound W was first identified biochem. The concns. of compound W (adjusted for creatinine levels) were assessed by a 3,3'-diiodothyronine sulfate radioimmunossay in ethanol exts. of urine samples. Compound W increased to 88 pmol (of 3,3'-diiodothyronine sulfate equivalent)/mmol creatinine in urinary samples obtained from 26 women in the first trimester of pregnancy compared with 40

pmol/mmol creatinine in 10 nonpregnant women. Excretion of compound W increased further during the second and third trimesters: 171 and 434 resp. In contrast, urinary 3,3',5-***triiodothyronine sulfate*** concns. measured by RIA were similar during pregnancy to values in nonpregnant women. Urinary compound W concns. increase with the progression of normal pregnancy and correlate with the increase in serum levels. Random spot urine compound W concns., adjusted for creatinine levels, may be used in place of serum levels in conditions in which obtaining serum samples may be tech. difficult, especially during population screening.

CC 2-7 (Mammalian Hormones)

IT Blood serum
Pregnancy
***Thyroid gland***
Urine
(urinary compound W in pregnant women as potential marker for fetal thyroid function)

IT ***31135-55-4, Triiodothyronine sulfate***
64192-57-0, 3,3'-Diiodothyronine sulfate
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(urinary compound W in pregnant women as potential marker for fetal thyroid function)

RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Abuhamad, A | 1995 | 6 | 368 | Ultrasound Obstet Gy | MEDLINE |
| Beck-Peccoz, P | 1995 | 5 | S203 | Thyroid | |
| Chopra, I | 1992 | 75 | 189 | J Clin Endocrinol Me | MEDLINE |
| Daffos, F | 1989 | 40 | 319 | Annu Rev Med | MEDLINE |
| Eelkman-Rooda, S | 1988 | 9 | 125 | J Immunoassay | MEDLINE |
| Glorieux, J | 1988 | 24 | 6 | Pediatr Res | MEDLINE |
| Hetzel, B | 1994 | | 1 | The damaged brain of | |
| Kirk, R | 1982 | | 112 | Experimental design | |
| Kirschenbaum, M | 1981 | | 29 | Practical nephrology | |
| Mol, J | 1985 | 117 | 1 | Endocrinology | HCAPLUS |
| Moses, A | 1996 | | 628 | The thyroid 7th ed | |
| Porterfield, S | 1993 | 14 | 94 | Endocrinol Rev | HCAPLUS |
| Vanmiddlesworth, L | 1995 | 5 | S106 | Thyroid | |
| Vestergaard, P | 1958 | 51 | 211 | J Lab Clin Med | HCAPLUS |
| Wu, S | 1993 | 265 | E115 | Am J Physiol, Endocr | |
| Wu, S | 1995 | 268 | E33 | Am J Physiol, Endocr | |
| Wu, S | 1992 | 131 | 1751 | Endocrinology | HCAPLUS |
| Wu, S | 1976 | 43 | 682 | J Clin Endocrinol Me | HCAPLUS |
| Wu, S | 1993 | 76 | 1625 | J Clin Endocrinol Me | HCAPLUS |
| Wu, S | 1994 | 78 | 1505 | J Clin Endocrinol Me | HCAPLUS |
| Wu, S | 1992 | 2 | 101 | Thyroid | MEDLINE |
| Zar, J | 1984 | | 306 | Biostatistical analy | |

L88 ANSWER 4 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 5
ACCESSION NUMBER: 1996:75140 HCAPLUS Full-text
TITLE: Study of serum 3,5,3'-***triiodothyronine sulfate*** concentration in patients with systemic non-thyroidal illness
AUTHOR(S): Santini, Ferruccio; Chiovato, Luca; Bartalena, Luigi; Lapi, Paola; Palla, Roberto; Panichi, Vincenzo; Velluzzi, Fernanda; Grasso, Lucia; Chopra, Inder J.; et al.
CORPORATE SOURCE: Inst. Endocrinology, Univ. Pisa, Pisa, Italy
SOURCE: European Journal of Endocrinology (1996), 134(1), 45-9

CODEN: EJOEEP; ISSN: 0804-4643
PUBLISHER: Scandinavian University Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Sulfation is an important pathway of triiodothyronine (T3) metabolism Increased serum T3 sulfate (T3S) values have been observed during fetal life and in pathol. conditions such as hyperthyroidism and selenium deficiency. Similar variations have also been reported in a small number of patients with systemic non-***thyroidal*** illness, but the underlying mechanisms have not been elucidated. In this study, serum T3S concns. have been measured by a specific RIA in 28 patients with end-stage neoplastic ***disease*** (ESND) and in 44 patients with chronic renal failure (CRF); 41 normal subjects served as controls. Both ESND and CRF patients had lower serum total T4 (TT4) and total T3 (TT3) than normal controls, while serum reverse T3 (rT3) was increased significantly in ESND (0.7 ± 0.5 nmol/l; $p < 0.001$ vs. controls) but not in CRF (0.3 ± 0.1 nmol/l). The TT3/rT3 ratio, an index of type I iodothyronine monideiodinase (type I MD) activity, was reduced significantly in both groups of patients. Serum T4-binding globulin (TBG) was decreased in CRF but not in ESND patients. Serum T3S was significantly higher both in ESND (71 ± 32 pmol/l) and CRF (100 ± 24 pmol/l) than in controls (50 ± 16 pmol/l, $p < 0.001$). Serum T3S values showed a pos. correlation with rT3 values and a neg. correlation with both TT3 and FT3 values in ESND, but not in CRF. In the latter group a pos. correlation was observed between T3S and TBG values. The T3S/FT3 ratio was higher both in CRF (18 ± 5) and in ESND (23 ± 18) as compared to controls (10 ± 4). Serum inorg. sulfate was increased and correlated pos. with T3S values in CRF patients. In conclusion, the results of this study in a large series of patients confirm that patients with systemic non-***thyroidal*** illness have increased serum T3S levels. The mechanisms responsible for these changes appear to be different in ESND and CRF patients. In ESND the increase in serum T3S levels is mainly related to reduced degradation of the hormone by type I MD, whereas in CRF it might be driven by the enhanced sulfate ion concentration, and could be partially dependent on the impaired renal excretion of T3S. Because T3S can be reconverted to T3, it is possible that increased T3S concns. contribute to maintenance of the euthyroid state in systemic non- ***thyroidal disease***.

L88 ANSWER 5 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 6
ACCESSION NUMBER: 1995:411911 HCAPLUS Full-text
DOCUMENT NUMBER: 122:178966
TITLE: Identification of 3,3'-T2S as a fetal thyroid hormone derivative in maternal urine in sheep
AUTHOR(S): Wu, Sing-Yung; Polk, Daniel; Fisher, Delbert A.; Huang, Wen-Sheng; Reviczky, Anita L.; Chen, Wei-Lian
CORPORATE SOURCE: Nuclear Medicine and Medical Services, Department of Veterans Affairs Medical Center, Long Beach, CA, 90822, USA
SOURCE: American Journal of Physiology (1995), 268(1, Pt. 1), E33-E39
CODEN: AJPHAP; ISSN: 0002-9513
PUBLISHER: American Physiological Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors measured 3,3'-diiodothyronine sulfate (T2S) in serum and urine obtained from euthyroid fetal (94-145 days of gestation, term = 150 days), newborn, and adult sheep and in serum and urine samples from ovine fetuses 13 days after total thyroidectomy conducted between 110 and 113 gestation days. Sham-operated twin fetuses served as controls. Mean serum T2S concns. increased progressively from 94 days (74 ng/dL) to 130 days (420 ng/dL), decreasing thereafter to 145 days (197 ng/dL). T2S concns. in fetal urine

peaked at 110 days (117 ng/dL). In ***hypothyroid*** fetuses, mean serum and urine T2S were 60 and 53% of control values. To assess the possibility that the T2S in maternal serum/urine is derived from fetal serum 3,5,3'-triiodothyronine (T3), the authors measured T3, T3 sulfate (T3S), and T2S in fetal serum and in maternal serum and urine after bolus infusion of T3 to the fetus. Addnl., T3, T3S, and T2S concns. were measured in maternal serum and urine after T3 infusion to the maternal ewes. Fetal T3 infusion rapidly increased fetal serum T3S and T2S. Maternal serum and urine T3S and T2S concns. increased, whereas T3 concns. remained unchanged. Maternal T3 infusion increased in serum and urine T3S and T2S levels, but the levels, relative to T3, were less than values measured after fetal T3 infusion. The authors conclude that T2S is a normal thyroid hormone metabolite in the ovine fetus and suggest that a major pathway of fetal T2S production is T3 to T3S to T2S. Both T3S and T2S appear to readily traverse the placenta to appear in maternal serum and urine.

CC 2-7 (Mammalian Hormones)

IT 6893-02-3, Triiodothyronine ***31135-55-4***, ***Triiodothyronine sulfate*** 64192-57-0, 3,3'-Diiodothyronine sulfate
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(diiodothyronine sulfate as a fetal thyroid hormone derivative in maternal urine in sheep)

L88 ANSWER 6 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 7

ACCESSION NUMBER: 1993:531726 HCAPLUS Full-text

DOCUMENT NUMBER: 119:131726

TITLE: The development of a radioimmunoassay for reverse ***triiodothyronine sulfate*** in human serum and amniotic fluid

AUTHOR(S): Wu, Sing Yung; Huang, Wen Sheng; Polk, Daniel; Chen, Wei Lian; Reviczky, Anita; Williams, John, III; Chopra, Inder J.; Fisher, Delbert A.

CORPORATE SOURCE: Nucl. Med. Med. Serv., Veterans Adm. Med. Cent., Long Beach, CA, 90822, USA

SOURCE: Journal of Clinical Endocrinology and Metabolism (1993), 76(6), 1625-30
CODEN: JCEMAZ; ISSN: 0021-972X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Sulfated iodothyronines including T4-sulfate (T4S) and T3-sulfate (T3S) have been identified in human serum and amniotic fluid. Little is known, however, about the existence of sulfate conjugation of reverse T3 (rT3S) in man. In this report, the authors employed a novel, sensitive, and specific rT3S RIA to address this question. The rabbit antiserum to rT3S was highly specific; T4, T3, rT3, and 3,3'-T2 showed <0.002% cross-reaction with the antiserum. Only T4S and T3S cross-reacted significantly (0.3% and 0.01%, resp.); other analogs cross-reacted <0.0001%. The detection threshold of the RIA was 14 pmol/L (1.0 ng/dL). The mean serum rT3S concentration (pmol/L) was 40 in euthyroid subjects. Values were similar in ***hypothyroid*** patients (38) and pregnant women (52) but significantly elevated to 176 in hyperthyroid patient, 74 in patients with nonthyroid illnesses, and 684 in cord sera of newborns. Serum rT3S increased significantly in hyperthyroid patients 1 day after administration of 1 g sodium ipodate orally. Reverse T3S was detected consistently in amniotic fluid at 14 to 22 wk of gestation and showed a marked rise 1-3 wk after intraamniotic administration of 500-1000 μg T4. The various data suggest that: (1) rT3S is a normal component of human serum and amniotic fluid; (2) it is derived from metabolism of T4 or rT3; (3) circulating rT3S increases in hyperthyroidism and in circumstances where type I 5'-monodeiodinating activity is low, e.g. nonthyroid illnesses, fetal life, and after administration of ipodate.

CC 2-1 (Mammalian Hormones)
ST reverse ***triiodothyronine sulfate*** detn RIA; blood serum rT3 sulfate detn; amniotic fluid reverse ***triiodothyronine sulfate***
IT Blood analysis
(reverse ***triiodothyronine sulfate*** determination in, in human by RIA)
IT Hyperthyroidism
(reverse ***triiodothyronine sulfate*** of amniotic fluid and blood serum of humans in)
IT Newborn
(reverse ***triiodothyronine sulfate*** of blood serum of human)
IT Pregnancy
(reverse ***triiodothyronine sulfate*** of blood serum of human in)
IT Blood serum
(reverse ***triiodothyronine sulfate*** of, of human)
IT Amniotic fluid
(reverse ***triiodothyronine sulfate*** of, of human, RIA for determination of)
IT Embryo
(fetus, reverse ***triiodothyronine sulfate*** of blood serum of human)
IT 70712-46-8
RL: ANST (Analytical study)
(deficiency of, reverse ***triiodothyronine sulfate*** of blood serum of human in)
IT 77074-49-8, Thyroxine sulfate
RL: ANST (Analytical study)
(of amniotic fluid and blood serum of human, reverse ***triiodothyronine sulfate*** in relation to)
IT 5587-89-3
RL: ANST (Analytical study)
(reverse ***triiodothyronine sulfate*** of blood serum of human in hyperthyroidism response to)

L88 ANSWER 7 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 9
ACCESSION NUMBER: 1993:617916 HCAPLUS Full-text
DOCUMENT NUMBER: 119:217916
TITLE: Sulfate conjugates of iodothyronines in developing sheep: Effect of fetal ***hypothyroidism***
AUTHOR(S): Wu, Sing Yung; Polk, Daniel H.; Huang, Wen Shen; Reviczky, Anita; Wang, Kathy; Fisher, Delbert A.
CORPORATE SOURCE: Nucl. Med. Med. Serv., Veterans Adm. Med. Cent., Long Beach, CA, 90822, USA
SOURCE: American Journal of Physiology (1993), 265(1, Pt. 1), E115-E120
CODEN: AJPHAP; ISSN: 0002-9513
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors recently showed that thyroxine sulfate (T4S) and 3,3',5-***triiodothyronine sulfate*** (T3S) were major thyroid hormone metabolites in ovine fetuses and neonates. To further characterize the sulfation pathway in ovine fetuses, the authors measured 3,3',5'-triiodothyronine (rT3S) in serum and other body fluids in samples obtained from fetal (94-145 days of gestational age, term = 150 days), newborn and adult sheep. In addition, T3S, T4S, and rT3S levels were measured in tissue fluids and serum samples obtained from ovine fetuses 13 days after total thyroidectomy (Tx) conducted at gestational age of 110-113 days. Sham-operated twin fetuses served as controls. The

relative order of mean rT3S concentration for various tissue fluids in fetuses was meconium > bile > serum > allantoic fluid > urine or amniotic fluid. Peak mean tissue fluid levels generally occurred at 110-130 days gestation. In ***hypothyroid*** fetuses, decreases in the mean serum concns. of T4S and rT3S, but not T3S, were noted. The mean rT3S level also was decreased in allantoic fluid, bile, and meconium, whereas T4S and T3S levels were reduced only in bile of the Tx fetuses. These data demonstrate that sulfation is a major pathway in thyroid hormone metabolism in both euthyroid and ***hypothyroid*** ovine fetuses.

CC 2-7 (Mammalian Hormones)

ST thyroid hormone metab sulfation fetus; embryo ***hypothyroid*** T4 T3 rT3 sulfate

IT ***Hypothyroidism***
(fetal, iodothyronine sulfate conjugates of tissues in)

IT Embryo
(thyroid hormone sulfates of, ***hypothyroidism*** effect on)

IT ***31135-55-4*** 77074-49-8, Thyroxine sulfate 79349-15-8
RL: BIOL (Biological study)
(of fetal tissues in ***hypothyroidism***)

L88 ANSWER 8 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 10

ACCESSION NUMBER: 1993:552539 HCAPLUS Full-text

DOCUMENT NUMBER: 119:152539

TITLE: Thyromimetic effects of 3,5,3'-***triiodothyronine sulfate*** in ***hypothyroid*** rats

AUTHOR(S): Santini, Ferruccio; Hurd, Robert E.; Lee, Brenda; Chopra, Inder J.

CORPORATE SOURCE: Cent. Health Sci., Univ. California, Los Angeles, CA, 90024-1682, USA

SOURCE: Endocrinology (1993), 133(1), 105-10
CODEN: ENDOAO; ISSN: 0013-7227

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Several parameters of the effects of thyroid hormone were examined in ***hypothyroid*** thyroidectomized (Tx) rats treated with T3 sulfate (T3S) or T3 [0.46 (low dose) or 2.3 (high dose) nmol/day for 10 days, i.p.]. Tx rats showed a marked degree of growth retardation, which improved after treatment with both doses of T3S and T3. The mean serum GH level was markedly reduced in Tx rats, and it improved to similar levels after treatment with the high dose of T3S and the low dose of T3. Type I monodeiodinase (MD) activity was markedly reduced in liver and kidney tissues of Tx rats. It increased in Tx rats treated with the high dose of T3S; the latter values were similar to those observed in Tx rats treated with the low dose of T3. Hepatic and renal type I MD activities increased to supranormal levels in Tx rats treated with the high dose of T3. Cardiac outer ring (5') monodeiodination of 3',5'-diiodothyronine to 3'-monoiodothyronine was also reduced in Tx rats, but it improved only after treatment with the high dose of T3. Type III 5-MD activity was reduced in the cerebral cortex of Tx rats. It was restored to normal in Tx rats treated with the high dose of T3S and both doses of T3. Serum TSH, markedly elevated in Tx rats, was appreciably reduced only in rats treated with the high dose of T3. In another study, suppression of serum TSH was observed when Tx rats were treated with T3S (11.5 nmol/day) or T3 (2.3 nmol/day) for 3 days. The authors conclude that administration of T3S to ***hypothyroid*** rats produces thyromimetic effects, with a potency .apprx.1/5 that of T3.

CC 2-7 (Mammalian Hormones)

IT Heart, metabolism
(3',5'-diiodothyronine monodeiodination in, ***triiodothyronine sulfate*** regulation of)

IT Thyroid hormones
RL: BIOL (Biological study)
(***triiodothyronine sulfate*** action as)
IT Kidney, composition
Liver, composition
(type I monodeiodinase of, ***triiodothyronine sulfate*** regulation of)
IT 4192-14-7, 3',5'-Diiodothyronine
RL: BIOL (Biological study)
(5'-monodeiodination of, in heart, ***triiodothyronine sulfate*** stimulation of)
IT 9002-71-5, Thyrotropin
RL: PROC (Process)
(of blood serum, ***triiodothyronine sulfate*** regulation of)
IT 68189-54-8
RL: PROC (Process)
(of cerebral cortex, ***triiodothyronine sulfate*** regulation of)
IT ***31135-55-4***
RL: ***BAC (Biological activity or effector, except adverse)***; BSU (Biological study, unclassified); BIOL (Biological study)
(thyroid hormone-like activity of)
IT 6893-02-3, T3 Hormone
RL: BIOL (Biological study)
(***triiodothyronine sulfate*** thyromimetic activity in relation to)

L88 ANSWER 9 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:584356 HCAPLUS Full-text
DOCUMENT NUMBER: 145:180412
TITLE: Treatment with drugs able to reduce iodine efflux significantly increases the intracellular retention time in thyroid cancer cells stably transfected with sodium iodide symporter complementary deoxyribonucleic acid
AUTHOR(S): Elisei, Rossella; Vivaldi, Agnese; Ciampi, Raffaele; Faviana, Pinuccia; Basolo, Fulvio; ***Santini, Ferruccio***; Traino, Claudio; Pacini, Furio; ***Pinchera, Aldo***
CORPORATE SOURCE: Department of Endocrinology and Metabolism, Section of Endocrinology, University of Pisa, Pisa, 56124, Italy
SOURCE: Journal of Clinical Endocrinology and Metabolism (2006), 91(6), 2389-2395
CODEN: JCEMAZ; ISSN: 0021-972X
PUBLISHER: Endocrine Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB One of the major limits of gene therapy with sodium iodide symporter (NIS), which enables cells to be subjected to radioiodine therapy, is that NIS-transfected cells rapidly release the intracellular iodine. We transfected human anaplastic (FRO) and medullary (TT) thyroid cancer-derived cell lines that were unable to take up iodine with human NIS cDNA. The possibility of increasing the iodine retention time by treating the transfected clones with myricetin, lithium, 17-(allylamino)-17-demethoxygeldanamycin (17-AAG), and 4,4'-diisothiocyanatostilbene-2,2'-disulfonic acid (DIDS) was explored. We obtained 19 FRO and 16 TT clones stably transfected with NIS. Twelve of 19 FRO and nine of 16 TT clones expressed the full-length NIS mRNA; 11 of 12 FRO and four of nine TT clones were able to take up radioiodine and correctly expressed NIS protein on the plasma membrane. Kinetic anal. of iodide uptake

in the two clones (FRO-19 and TT-2) with the highest uptaking activity revealed that the plateau was reached after 30 min by FRO-19 and after 60 min by TT-2. The t1/2 of the iodide efflux was 9 min in FRO-19 and 20 min in TT-2. The treatment of the two cell lines with four different drugs revealed that DIDS and 17-AAG, but not myricetin and lithium, significantly increased the intracellular iodide retention time in FRO-19, but not in TT-2. We showed that 17-AAG and DIDS prolong the retention time of 131I in NIS-transfected thyroid tumoral cells, thus reinforcing the hope of using this approach for future clin. application, especially in patients with thyroid carcinoma who are no longer responsive to conventional therapy.

CC 1-6 (Pharmacology)
Section cross-reference(s): 3, 8

RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Almeida, R | 2005 | 15 | 251 | Trends Cell Biol | HCAPLUS |
| Ambesi Impiombato, F | 1980 | 77 | 3455 | Proc Natl Acad Sci U | HCAPLUS |
| Amphoux-Fazekas, T | 1998 | 141 | 129 | Mol Cell Endocrinol | HCAPLUS |
| Armstrong, J | 1992 | 88 | 105 | Mol Cell Endocrinol | HCAPLUS |
| Arturi, F | 1998 | 83 | 2193 | J Clin Endocrinol Me | |
| Bagatell, R | 2004 | 3 | 1021 | Mol Cancer Ther | HCAPLUS |
| Braverman, L | 2000 | | | Werner and Ingbar's | |
| Cabantchik, Z | 1992 | 262 | C803 | Am J Physiol | HCAPLUS |
| Cengic, N | 2005 | 90 | 4457 | J Clin Endocrinol Me | HCAPLUS |
| Cho, J | 2002 | 9 | 1139 | Gene Ther | HCAPLUS |
| Chung, J | 2002 | 43 | 1188 | J Nucl Med | HCAPLUS |
| Dai, G | 1996 | 379 | 458 | Nature | HCAPLUS |
| Devuyst, O | 1997 | 272 | C1299 | Am J Physiol | HCAPLUS |
| Elisei, R | 1994 | 78 | 867 | J Clin Endocrinol Me | HCAPLUS |
| Elisei, R | 2004 | 891 | 33 | J Clin Endocrinol Me | |
| Elisei, R | 2005 | 90 | 2403 | J Clin Endocrinol Me | HCAPLUS |
| Fagard, M | 2000 | 51 | 167 | Annu Rev Plant Physi | HCAPLUS |
| Goddu, S | 1994 | 35 | 521 | J Nucl Med | MEDLINE |
| Haberkorn, U | 2001 | 42 | 317 | J Nucl Med | HCAPLUS |
| Haugen, B | 1999 | 16 | 34 | Semin Surg Oncol | MEDLINE |
| Huang, M | 2001 | 8 | 612 | Cancer Gene Ther | HCAPLUS |
| Jhiang, S | 2000 | 1 | 205 | Rev Endocr Metab Dis | HCAPLUS |
| Koong, S | 1999 | 84 | 912 | J Clin Endocrinol Me | HCAPLUS |
| Lee, W | 2003 | 10 | 845 | Oncol Rep | HCAPLUS |
| Marsee, D | 2004 | 279 | 43990 | J Biol Chem | HCAPLUS |
| Ong, K | 1997 | 29 | 121 | Gen Pharmacol | HCAPLUS |
| Rodriguez, A | 2002 | 87 | 3500 | J Clin Endocrinol Me | HCAPLUS |
| Rousset, B | 2004 | | | The thyroid and its | |
| Royaux, I | 2000 | 141 | 839 | Endocrinology | HCAPLUS |
| Santini, F | 2002 | 87 | 4160 | J Clin Endocrinol Me | HCAPLUS |
| Schlumberger, M | 1999 | | 117 | Thyroid tumors | |
| Schroder-van der Elst, | 2004 | 150 | 557 | Eur J Endocrinol | |
| Shimura, H | 1997 | 138 | 4493 | Endocrinology | HCAPLUS |
| Smanik, P | 1996 | 226 | 339 | Biochem Biophys Res | HCAPLUS |
| Smit, J | 2002 | 87 | 1247 | J Clin Endocrinol Me | HCAPLUS |
| Smith, J | 2000 | 10 | 939 | Thyroid | |
| Spitweg, C | 2000 | 60 | 6526 | Cancer Res | |
| Spitzweg, C | 1999 | 59 | 2136 | Cancer Res | HCAPLUS |
| Spitzweg, C | 2001 | 86 | 3327 | J Clin Endocrinol Me | HCAPLUS |
| Urabe, M | 1991 | 129 | 807 | Endocrinology | HCAPLUS |

L88 ANSWER 10 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:634158 HCAPLUS Full-text
DOCUMENT NUMBER: 143:206695

TITLE: Influence of human body composition on serum peak thyrotropin (TSH) after recombinant human TSH administration in patients with differentiated thyroid carcinoma

AUTHOR(S): Castagna, Maria Grazia; ***Pinchera, Aldo***; Marsili, Alessandro; Giannetti, Monica; Molinaro, Eleonora; Fierabracci, Paola; Grasso, Lucia; Pacini, Furio; ***Santini, Ferruccio***; Elisei, Rossella

CORPORATE SOURCE: Department of Endocrinology and Metabolism, University of Pisa, Pisa, 56100, Italy

SOURCE: Journal of Clinical Endocrinology and Metabolism (2005), 90(7), 4047-4050
CODEN: JCEMAZ; ISSN: 0021-972X

PUBLISHER: Endocrine Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Objectives: In this study, we evaluated the influence of height, weight, body mass index (BMI), body surface area, and body composition [total lean body mass (LBM) and fat body mass] on serum peak TSH levels obtained after recombinant human (rh)TSH. Furthermore, to verify whether the serum peak TSH influenced the efficacy of radioiodine (131I), we compared the rate of thyroid remnant ablation according to the patients' BMI. Patients: We studied 105 patients with differentiated thyroid carcinoma who underwent rhTSH stimulation test. Serum TSH measurements were performed before and 24, 48, and 72 h after rhTSH administration. We also compared the rate of thyroid remnant ablation among 70 differentiated thyroid carcinoma patients with different BMI. Results: The serum peak TSH after rhTSH was significantly lower in overweight and obese subjects compared with normal-weight subjects (92.1±41.8, 82.4±24.2, and 112.7±46.3 μU/mL, resp.; P = 0.01) and in males compared with females (74.6±22.3 and 105.0±43.0 μU/mL, resp.; P = 0.0002). By univariate anal., serum peak TSH was neg. related to weight, height, body surface area, BMI, LBM, and fat body mass, but only LBM was independently associated with serum peak TSH levels. Although it was confirmed that overweight and obese patients had a lower serum peak TSH, the rate of ablation did not differ among normal-weight, over-weight, and obese patients. Conclusions: With this study we demonstrated that LBM is the only parameter independently associated with serum peak TSH after rhTSH administration. However, the serum peak TSH does not influence the rate of 131I remnant ablation.

CC 2-7 (Mammalian Hormones)
Section cross-reference(s): 1

RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Arad, E | 1993 | 18 | 662 | Clin Nucl Med | MEDLINE |
| Barbaro, D | 2003 | 88 | 4110 | J Clin Endocrinol Me | HCAPLUS |
| de Keizer, B | 2002 | 30 | 367 | Eur J Nucl Med Mol I | |
| Haugen, B | 1999 | 84 | 3877 | J Clin Endocrinol Me | HCAPLUS |
| Ladenson, P | 1997 | 337 | 888 | N Engl J Med | HCAPLUS |
| Lippi, F | 2001 | 144 | 5 | Eur J Endocrinol | HCAPLUS |
| Logue, J | 1994 | 67 | 1127 | Br J Radiol | MEDLINE |
| Luster, M | 2000 | 85 | 3640 | J Clin Endocrinol Me | HCAPLUS |
| Mazzaferri, E | 2003 | 88 | 1433 | J Clin Endocrinol Me | HCAPLUS |
| Morgan, D | 1994 | 26 | 292 | Clin Pharmacokinet | HCAPLUS |
| Pacini, F | 2002 | 87 | 4063 | J Clin Endocrinol Me | HCAPLUS |
| Pacini, F | 2004 | 8 | 21 | Turk J Endocrinol Me | |
| Robbins, R | 2001 | 11 | 865 | Thyroid | MEDLINE |
| Roberts, C | 1976 | 3 | 907 | Br J Clin Pharmacol | HCAPLUS |
| Roubenoff, R | 1991 | 49 | 163 | Nutr Rev | MEDLINE |
| Samuel, A | 1994 | 35 | 1944 | J Nucl Med | MEDLINE |

| | | | | | |
|---|---|---|---|---|---|
| Sartorio, A | 1988 | 11 | 727 | J Endocrinol Invest | HCAPLUS |
| Shaikh, S | 2003 | 57 | 389 | Eur J Clin Nutr | MEDLINE |
| Thotakura, N | 1991 | 128 | 341 | Endocrinology | HCAPLUS |
| Vitale, G | 2003 | 88 | 1319 | J Clin Endocrinol Me | HCAPLUS |

L88 ANSWER 11 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:553164 HCAPLUS Full-text
DOCUMENT NUMBER: 143:190324
TITLE: Genetic analysis of metamorphic and premetamorphic Xenopus ciliary marginal zone
AUTHOR(S): Casarosa, S.; Leone, P.; Cannata, S.; ***Santini, F.***; ***Pinchera, A.***; Barsacchi, G.; Andreazzoli, M.
CORPORATE SOURCE: Laboratorio di Biologia Cellulare e dello Sviluppo, Dipartimento di Fisiologia e Biochimica, Universita di Pisa, Ghezzano-Pisa, Italy
SOURCE: Developmental Dynamics (2005), 233(2), 646-651
CODEN: DEDYEI; ISSN: 1058-8388
PUBLISHER: Wiley-Liss, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A major event affecting the eye during amphibian metamorphosis is an asym. growth of the ventrotemporal portion of the retina compared with its dorsonasal counterpart. This event is due to an increased proliferation of the precursors of the ventral ciliary marginal zone (CMZ). Here, the authors analyze the expression patterns of several key homeobox genes implicated in eye development (Xrx1, Xvax2, Xsix3, Xpax6, Xchx10, Xotx2) to understand whether they are active at the time in which the metamorphic changes of the retina occur. The authors also analyze their expression patterns in the ventral and dorsal CMZ and compare them with bromodeoxyuridine incorporation in the CMZ. The authors' results suggest that the metamorphic CMZ maintains the functional subdivisions described during embryonic development. Moreover, the authors find that genes involved in proliferation and cell type determination of the embryonic retina are actively transcribed in the proliferating CMZ, thus indicating a potential regulatory role for these genes in the metamorphic retina.

CC 12-3 (Nonmammalian Biochemistry)
RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Andreazzoli, M | 2003 | 130 | 5143 | Development | HCAPLUS |
| Barbieri, A | 2002 | 129 | 805 | Development | HCAPLUS |
| Barbieri, A | 1999 | 96 | 10729 | Proc Natl Acad Sci U | HCAPLUS |
| Belecky-Adams, T | 1997 | 38 | 1293 | Invest Ophthalmol Vi | MEDLINE |
| Bernier, G | 2000 | 93 | 59 | Mech Dev | HCAPLUS |
| Bovolenta, P | 1998 | 70 | 201 | Mech Dev | HCAPLUS |
| Burmeister, M | 1996 | 12 | 376 | Nat Genet | HCAPLUS |
| Casarosa, S | 2003 | 22 | 25 | Mol Cell Neurosci | HCAPLUS |
| Chen, C | 2000 | 90 | 293 | Mech Dev | MEDLINE |
| Chow, R | 1999 | 126 | 4213 | Development | HCAPLUS |
| Chuang, J | 1999 | 84 | 195 | Mech Dev | HCAPLUS |
| Del Bene, F | 2004 | 427 | 745 | Nature | HCAPLUS |
| Doetsch, F | 1999 | 97 | 703 | Cell | HCAPLUS |
| Dorsky, R | 1995 | 14 | 487 | Neuron | HCAPLUS |
| Furukawa, T | 2000 | 26 | 383 | Neuron | HCAPLUS |
| Ghanbari, H | 2001 | 101 | 271 | Mech Dev | HCAPLUS |
| Grant, S | 1986 | 92 | 43 | J Embryol Exp Morpho | MEDLINE |
| Heller, N | 1997 | 69 | 83 | Mech Dev | HCAPLUS |
| Hirsch, N | 1997 | 32 | 45 | J Neurobiol | HCAPLUS |

| | | | | | |
|---|---|---|---|---|---|
| Liu, I | 1994 | 13 | 377 | Neuron | HCAPLUS |
| Liu, Y | 2001 | 100 | 115 | Mech Dev | HCAPLUS |
| Loosli, F | 2001 | 128 | 4035 | Development | HCAPLUS |
| Loosli, F | 1999 | 13 | 649 | Genes Dev | HCAPLUS |
| Mann, F | 2001 | 23 | 319 | Bioessays | HCAPLUS |
| Marquardt, T | 2001 | 105 | 43 | Cell | HCAPLUS |
| Mathers, P | 1997 | 387 | 603 | Nature | HCAPLUS |
| Mui, S | 2002 | 129 | 797 | Development | HCAPLUS |
| Newport, J | 1982 | 30 | 687 | Cell | HCAPLUS |
| Nieuwkoop, P | 1967 | | | Normal table of deve | |
| Ohnuma, S | 2002 | 129 | 2435 | Development | HCAPLUS |
| Pannese, M | 1995 | 121 | 707 | Development | HCAPLUS |
| Passini, M | 1997 | 388 | 495 | J Comp Neurol | HCAPLUS |
| Perron, M | 1998 | 199 | 185 | Dev Biol | HCAPLUS |
| Straznicky, K | 1971 | 26 | 67 | J Embryol Exp Morpho | MEDLINE |
| Viczian, A | 2003 | 130 | 1281 | Development | HCAPLUS |
| Wetts, R | 1989 | 136 | 254 | Dev Biol | MEDLINE |

L88 ANSWER 12 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:59436 HCAPLUS Full-text
TITLE: Authors' response: Haptoglobin and body mass index
AUTHOR(S): Chiellini, Chiara; ***Santini, Ferruccio***; Marsili, Alessandro; Vitti, Paolo; ***Pinchera, Aldo***; Maffei, Margherita
CORPORATE SOURCE: Dulbecco Telethon Institute, Pisa, 56126, Italy
SOURCE: Journal of Clinical Endocrinology and Metabolism (2005), 90(1), 594-595
CODEN: JCEMAZ; ISSN: 0021-972X
PUBLISHER: Endocrine Society
DOCUMENT TYPE: Journal; Letter
LANGUAGE: English
AB Unavailable
RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Chiellini, C | 2002 | 190 | 251 | J Cell Physiol | HCAPLUS |
| Chiellini, C | 2004 | 89 | 2678 | J Clin Endocrinol Me | HCAPLUS |
| Cohen, P | 2002 | 297 | 240 | Science | HCAPLUS |
| De Fourmestraux, V | | | | J Biol Chem | |
| Do Nascimento, C | 2004 | 313 | 702 | Biochem Biophys Res | |
| Ferrante, A | 2001 | 50 | 2268 | Diabetes | HCAPLUS |
| Friedrichs, W | 1995 | 209 | 250 | Bioch Biophys Res Co | HCAPLUS |
| Taes, Y | 2005 | 90 | 594 | J Clin Endocrinol Me | HCAPLUS |

L88 ANSWER 13 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:59361 HCAPLUS Full-text
DOCUMENT NUMBER: 142:367991
TITLE: Lean body mass is a major determinant of levothyroxine dosage in the treatment of thyroid diseases
AUTHOR(S): ***Santini, Ferruccio***; ***Pinchera, Aldo*** ; Marsili, Alessandro; Ceccarini, Giovanni; Castagna, Maria Grazia; Valeriano, Rocco; Giannetti, Monica; Taddei, Donatella; Centoni, Roberta; Scartabelli, Giovanna; Rago, Teresa; Mammoli, Claudia; Elisei, Rossella; Vitti, Paolo
CORPORATE SOURCE: Department of Endocrinology, University of Pisa, Pisa, 56124, Italy
SOURCE: Journal of Clinical Endocrinology and Metabolism (2005), 90(1), 124-127

CODEN: JCEMAZ; ISSN: 0021-972X
PUBLISHER: Endocrine Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Total body weight is usually employed to calculate the amount of L-T4 to be administered in patients with thyroid diseases. The aim of this study was to evaluate the effect of body composition on L-T4 requirements. Body composition was assessed by dual energy x-ray absorptiometry in 75 patients on TSH-suppressive L-T4 therapy after conventional thyroid ablation for differentiated cancer. The mean daily dose of L-T4 was lower in normal-weight (127.5±21.3 μg/d) vs. overweight (139.4±24.5) and obese (151.3±29.1) subjects. There was a much stronger association between the L-T4 dosage and lean body mass ($P < 0.001$, $r = 0.667$) compared with fat mass ($P = 0.023$, $r = 0.26$). Measurement of regional tissue composition showed peripheral lean mass as the best correlate with the dose of L-T4 ($r = 0.679$, $P < 0.001$) whereas no correlation was observed with peripheral fat mass. In conclusion individual L-T4 requirements are dependent on lean body mass. Age-and gender-related differences in L-T4 needs reflect different proportions of lean mass over the total body weight An estimate of lean mass may be helpful to shorten the time required to attain a stable dose of L-T4, particularly in subjects with high body mass index values that may be due either to increased muscular mass or to obesity.
CC 2-7 (Mammalian Hormones)
RETABLE


| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Alexander, E | 2004 | 351 | 241 | N Engl J Med | HCAPLUS |
| Bartalena, L | 1994 | 21 | 60 | Acta Med Austriaca | MEDLINE |
| Bracco, D | 1996 | 81 | 2580 | J Appl Physiol | MEDLINE |
| Burmeister, L | 1992 | 75 | 344 | J Clin Endocrinol Me | MEDLINE |
| Cunningham, J | 1984 | 32 | 204 | J Am Geriatr Soc | MEDLINE |
| England, M | 1986 | 292 | 264 | Am J Med Sci | MEDLINE |
| Fazio, S | 2004 | 59 | 31 | Recent Prog Horm Res | HCAPLUS |
| Fish, L | 1987 | 316 | 764 | N Engl J Med | MEDLINE |
| Franklyn, J | 1994 | 78 | 1368 | J Clin Endocrinol Me | MEDLINE |
| Friedman, J | 1998 | 395 | 763 | Nature | HCAPLUS |
| Haarbo, J | 1991 | 11 | 331 | Clin Physiol | MEDLINE |
| Hegedus, L | 2003 | 24 | 102 | Endocr Rev | |
| Hermus, A | 1998 | 338 | 1438 | N Engl J Med | MEDLINE |
| Kaplan, M | 1993 | 93 | 249 | Postgrad Med | MEDLINE |
| Leonard, J | 2000 | | 136 | Werner, Ingbar's The | |
| Mandel, S | 1993 | 119 | 492 | Ann Intern Med | MEDLINE |
| Mazzaferri, E | 1987 | 14 | 315 | Semin Oncol | MEDLINE |
| Morgan, D | 1994 | 26 | 292 | Clin Pharmacokinet | HCAPLUS |
| Pacini, F | 2002 | 87 | 1499 | J Clin Endocrinol Me | HCAPLUS |
| Pujol, P | 1996 | 81 | 4318 | J Clin Endocrinol Me | HCAPLUS |
| Rosenbaum, R | 1982 | 96 | 53 | Ann Intern Med | MEDLINE |
| Roti, E | 1993 | 14 | 401 | Endocr Rev | MEDLINE |
| Salvatore, D | 1996 | 137 | 3308 | Endocrinology | HCAPLUS |
| Santini, F | 2003 | 88 | 2825 | J Clin Endocrinol Me | HCAPLUS |
| Sawin, C | 1983 | 75 | 206 | Am J Med | MEDLINE |
| Sawin, C | 1994 | 331 | 1249 | N Engl J Med | MEDLINE |
| Surks, M | 1995 | 333 | 1688 | N Engl J Med | HCAPLUS |
| Toft, A | 1994 | 331 | 174 | N Engl J Med | HCAPLUS |
| Uzzan, B | 1996 | 81 | 4278 | J Clin Endocrinol Me | HCAPLUS |
| Wesche, M | 1998 | 48 | 701 | Clin Endocrinol (Oxf | MEDLINE |
| Woeber, K | 2002 | 25 | 106 | J Endocrinol Invest | HCAPLUS |
| Wolf, M | 1996 | 134 | 168 | Eur J Endocrinol | HCAPLUS |

L88 ANSWER 14 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:635974 HCAPLUS Full-text
DOCUMENT NUMBER: 141:120896
TITLE: Serum haptoglobin: A novel marker of adiposity in humans
AUTHOR(S): Chiellini, C.; ***Santini, F.***; Marsili, A.; Berti, P.; Bertacca, A.; Pelosini, C.; Scartabelli, G.; Pardini, E.; Lopez-Soriano, J.; Centoni, R.; Ciccarone, A. M.; Benzi, L.; Vitti, P.; Del Prato, S.; ***Pinchera, A.***; Maffei, M.
CORPORATE SOURCE: Dulbecco Telethon Institute and Department of Endocrinology and Metabolism, Sections of Endocrinology, University of Pisa, Pisa, 56126, Italy
SOURCE: Journal of Clinical Endocrinology and Metabolism (2004), 89(6), 2678-2683
CODEN: JCEMAZ; ISSN: 0021-972X
PUBLISHER: Endocrine Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Haptoglobin (Hp) is a glycoprotein involved in the acute phase response to inflammation. Our previous findings indicate that Hp mRNA and protein are present in the adipose tissue of rodents and that Hp gene expression is up-regulated in obese models. The aim of the present study was to establish whether Hp could be considered a marker of obesity in humans. In 312 subjects, serum Hp was correlated directly with body mass index (BMI), leptin, C-reactive protein (CRP), and age. In a multivariate stepwise regression anal., BMI and CRP were independent determinants of serum Hp in females, with BMI having the strongest effect. CRP and age were independent determinants of serum Hp in males, although explaining only a modest percentage of the total variability. Serum Hp was pos. associated with body fat, as assessed by dual-energy x-ray absorptiometry, both in female and in male groups. The level of significance improved when serum Hp was analyzed against fat mass adjusted for lean mass. Finally, Northern and Western blot analyses performed in biopsies of s.c. abdominal fat from 20 obese individuals showed the presence of Hp mRNA and protein in the human adipose tissue. In conclusion, serum Hp constitutes a novel marker of adiposity in humans, and the adipose tissue likely contributes to determine its levels.

CC 13-6 (Mammalian Biochemistry)

RETABLE


| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Abderrahim-Ferkoune, A | 2003 | 44 | 994 | J Lipid Res | HCAPLUS |
| Arredouani, M | 2003 | 108 | 144 | Immunology | HCAPLUS |
| Ausubel, F | 1999 | | | Current protocols in | |
| Barzilai, N | 1999 | 892 | 58 | Ann NY Acad Sci | MEDLINE |
| Bastard, J | 1999 | 99 | 2221 | Circulation | MEDLINE |
| Bensi, G | 1985 | 4 | 119 | EMBO J | HCAPLUS |
| Chehab, F | 1996 | 12 | 318 | Nat Genet | HCAPLUS |
| Chiellini, C | 2002 | 190 | 251 | J Cell Physiol | HCAPLUS |
| Chiellini, C | 2003 | 195 | 309 | J Cell Physiol | HCAPLUS |
| Das, U | 2001 | 17 | 953 | Nutrition | HCAPLUS |
| Do Nascimento, O | 2004 | 313 | 702 | Biochem Biophys Res | |
| El Ghmati, S | 1996 | 156 | 2542 | J Immunol | HCAPLUS |
| Engstrom, G | 2002 | 22 | 2054 | Arterioscler Thromb | |
| Fain, J | 2004 | 45 | 536 | J Lipid Res | HCAPLUS |
| Friedrichs, W | 1995 | 209 | 250 | Biochem Biophys Res | HCAPLUS |
| Guerre-Millo, M | 2002 | 25 | 855 | J Endocrinol Invest | HCAPLUS |
| Hannerz, J | 1995 | 19 | 240 | Int J Obes Relat Met | MEDLINE |
| Hausman, D | 2001 | 2 | 239 | Obes Rev | MEDLINE |

| | | | | | |
|---|---|---|---|---|---|
| Koch, W | 2002 | 48 | 1377 | Clin Chem | HCAPLUS |
| Kuchroo, V | 2003 | 422 | 27 | Nature | HCAPLUS |
| Maffei, M | 1995 | 1 | 1155 | Nat Med | HCAPLUS |
| Montani, J | 2002 | 26 | S28 | Int J Obes Relat Met | HCAPLUS |
| Oliviero, S | 1987 | 6 | 1905 | EMBO J | HCAPLUS |
| Roubenoff, R | 2003 | 6 | 295 | Curr Opin Clin Nutr | |
| Sanna, V | 2003 | 111 | 241 | J Clin Invest | HCAPLUS |
| Taylor, S | 1996 | 274 | 1151 | Science | HCAPLUS |
| Trayhurn, P | 2001 | 60 | 329 | Proc Nutr Soc | HCAPLUS |
| Uchegbu, E | 2002 | 25 | 915 | J Endocrinol Invest | MEDLINE |
| Visser, M | 1999 | 282 | 2131 | JAMA | HCAPLUS |
| Yudkin, J | 1999 | 19 | 972 | Arterioscler Thromb | HCAPLUS |
| Zahorska-Markiewicz, B | 2000 | 24 | 1392 | Int J Obes Relat Met | HCAPLUS |

L88 ANSWER 15 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:107562 HCAPLUS Full-text
DOCUMENT NUMBER: 143:2341
TITLE: Relative potencies and additivity of perchlorate, thiocyanate, nitrate, and iodide on the inhibition of radioactive iodide uptake by the human sodium iodide symporter
AUTHOR(S): Tonacchera, Massimo; ***Pinchera, Aldo***; Dimida, Antonio; Ferrarini, Eleonora; Agretti, Patrizia; Vitti, Paolo; ***Santini, Ferruccio***; Crump, Kenny; Gibbs, John
CORPORATE SOURCE: Department of Endocrinology and Metabolism and Research Center of Excellence for the Study of Damages to the Nervous and Endocrine Systems produced by Environmental, Alimentary and Pharmacological Agents, University of Pisa, Italy
SOURCE: Thyroid (2004), 14(12), 1012-1019
CODEN: THYRER; ISSN: 1050-7256
PUBLISHER: Mary Ann Liebert, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The presence of perchlorate (ClO4-) in some U.S. drinking water supplies has raised concern about potential adverse thyroidal health effects, because ClO4- is known to competitively inhibit iodide uptake at the sodium iodide symporter (NIS). Humans are nutritionally and environmentally exposed to other competitive inhibitors of iodide uptake, including thiocyanate (SCN-) and nitrate (NO3-). The joint inhibiting effects of these three anions was studied by exposing Chinese hamster ovary cells stably expressing human NIS to varying concns. of each anion sep., and in combination, and conducting measurements of 125I- uptake. The entire data set was fit to a single Hill equation using maximum likelihood. The relative potency of ClO4- to inhibit 125I- uptake at the NIS was found to be 15, 30 and 240 times that of SCN-, I-, and NO3- resp. on a molar concentration basis, with no evidence of synergism. These results are consistent with a common mode of action by these anions of simple competitive interaction, in which a concentration of any one of ClO4-, SCN-, and NO3-, occurring either individually or as part of a mixture of the three anions, is indistinguishable from a concentration or dilution of either one of the remaining two ions in inhibiting iodine uptake at the NIS.

CC 4-3 (Toxicology)
Section cross-reference(s): 2, 14, 61

RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Ajjan, R | 1998 | 83 | 1217 | J Clin Endocrinol Me | HCAPLUS |
| Alexander, W | 1966 | 78 | 581 | Endocrinology | HCAPLUS |

| | | | | | |
|---|---|---|---|---|---|
| Althaus, R | 2001 | 84 | 1829 | J Dairy Sci | HCAPLUS |
| Andrews, J | 1973 | 80 | 810 | J Obstet Gynaecol Br | MEDLINE |
| Banerjee, K | 1997 | 78 | 679 | Br J Nutr | HCAPLUS |
| Bottoms, S | 1982 | 144 | 787 | Am J Obstet Gynecol | HCAPLUS |
| Charmandari, E | 2001 | 32 | 423 | J Pediatr Gastroente | HCAPLUS |
| Chen, Y | 1990 | 45 | 163 | Arch Environ Health | HCAPLUS |
| Clements, F | 1960 | 16 | 133 | Br Med Bull | MEDLINE |
| Cox, D | 1974 | | | Theoretical Statisti | |
| Crump, C | 2000 | 42 | 603 | Occup Environ Med | HCAPLUS |
| Foss, O | 1986 | 46 | 245 | Scand J Clin Lab Inv | HCAPLUS |
| Fukata, S | 1996 | 19 | 607 | J Endocrinol Invest | MEDLINE |
| Greer, M | 1966 | 79 | 237 | Endocrinology | HCAPLUS |
| Greer, M | 1962 | 18 | 187 | Rec Prog Horm Res | HCAPLUS |
| Hauth, J | 1984 | 63 | 519 | Obstet Gynecol | HCAPLUS |
| Jo, T | 1998 | 12 | 523 | In Vivo | HCAPLUS |
| Junge, B | 1985 | 291 | 22 | Br Med J (Clin Res E | MEDLINE |
| Kassim, S | 2002 | 35 | 641 | Clin Biochem | HCAPLUS |
| Kenakin, T | 1993 | | | Analysis of Drug-Rec | |
| Lamm, S | 1999 | 41 | 248 | J Occup Environ Med | MEDLINE |
| Laurberg, P | 2002 | 12 | 133 | Thyroid | |
| Meberg, A | 1979 | 68 | 547 | Acta Paediatr Scand | HCAPLUS |
| Michajlovski, N | 1958 | 312 | 26 | Z Physiol Chem | HCAPLUS |
| Minamino, T | 1997 | 17 | 3191 | Arterioscler Thromb | MEDLINE |
| Moller, H | 1989 | 18 | 206 | Int J Epidemiol | MEDLINE |
| Petersen, A | 1999 | 16 | 291 | Food Addit Contam | HCAPLUS |
| Robertson, A | 1987 | 44 | 351 | Br J Ind Med | HCAPLUS |
| Rosling, H | 1995 | 375 | 271 | Acta Horticulturae | |
| Schultz, D | 1985 | 6 | 847 | Carcinogenesis | HCAPLUS |
| Schulz, V | 1979 | 57 | 243 | Klin Wochenschr | HCAPLUS |
| Soto-Blanco, B | 2003 | 34 | 213 | Vet Res | HCAPLUS |
| Taniuchi, S | 2001 | 56 | 693 | Allergy | HCAPLUS |
| Tannenbaum, S | 1979 | 205 | 1332 | Science | MEDLINE |
| Tonacchera, M | 2001 | 144 | 611 | Eur J Endocrinol | HCAPLUS |
| Urbansky, E | 2002 | 9 | 187 | Environ Sci Pollut R | HCAPLUS |
| Vanderpas, J | 1984 | 20 | 327 | Clin Endocrinol | MEDLINE |
| Vanetten, C | 1969 | | 103 | Goitrogens | HCAPLUS |
| Venzon, D | 1988 | 37 | 87 | Appl Stat | |
| Virtanen, A | 1963 | 3 | 23 | Zeit Ernahrungswisse | |
| Wagner, D | 1984 | 57 | 247 | IARC Sci Publ | HCAPLUS |
| Watanabe, T | 2000 | 301 | 169 | Clin Chim Acta | HCAPLUS |
| Wyngaarden, J | 1952 | 50 | 537 | Endocrinology | HCAPLUS |
| Wyngaarden, J | 1953 | 52 | 568 | Endocrinology | HCAPLUS |
| Ysart, G | 1999 | 16 | 521 | Food Addit Contam | HCAPLUS |
| Zapico, P | 1991 | 74 | 783 | J Dairy Sci | HCAPLUS |

L88 ANSWER 16 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:157063 HCAPLUS Full-text
DOCUMENT NUMBER: 140:268997
TITLE: Genetic screening for melanocortin-4 receptor mutations in a cohort of italian obese patients: Description and functional characterization of a novel mutation
AUTHOR(S): ***Santini, Ferruccio***; Maffei, Margherita; Ceccarini, Giovanni; Pelosini, Caterina; Scartabelli, Giovanna; Rosellini, Veronica; Chiellini, Chiara; Marsili, Alessandro; Lisi, Simonetta; Tonacchera, Massimo; Agretti, Patrizia; Chiovato, Luca; Mammoli, Claudia; Vitti, Paolo; ***Pinchera, Aldo***
CORPORATE SOURCE: Department of Endocrinology and Metabolism, University of Pisa, Pisa, 56124, Italy

SOURCE: Journal of Clinical Endocrinology and Metabolism (2004), 89(2), 904-908
CODEN: JCEMAZ; ISSN: 0021-972X
PUBLISHER: Endocrine Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Mutations in the human melanocortin-4 receptor (MC4-R) gene may account for up to 5.8% of morbid nonsyndromic obesity. We have screened 120 unrelated obese patients for variants of the MC4-R gene. Four heterozygous missense variants were detected, including two polymorphisms (Val103Ile and Ile251Leu) previously described in the literature. A novel heterozygous mutation (Glu308Lys) was detected in a 36-yr-old female patient. Compared with the wild-type receptor, cells expressing the mutated receptor showed a reduced stimulation of cAMP production and a reduction of radioactive αMSH binding. No segregation of the mutation with the obese phenotype could be demonstrated. A second, potentially pathogenic mutation (Ser30Phe) was detected in a 31-yr-old female patient. Functional anal. of the mutated receptor showed no change in the affinity to the natural ligand αMSH nor limited ability to stimulate cAMP production Sixty lean subjects were also screened, and no addnl. variants of the MC4-R gene were observed, except for two individuals with the Val103Ile polymorphism. In conclusion, we have screened a population of Italian obese subjects for MC4-R variants, demonstrating a 1.7% prevalence of potentially pathogenic mutations. A novel heterozygous missense mutation (Glu308Lys) that impairs MC4-R functional activity in vitro was characterized.

CC 14-14 (Mammalian Pathological Biochemistry)
Section cross-reference(s): 2, 3

RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Arch, J | 2002 | 25 | 867 | J Endocrinol Invest | HCAPLUS |
| Chiovato, L | 1987 | 10 | 383 | J Endocrinol Invest | MEDLINE |
| Cone, R | 2000 | 106 | 185 | J Clin Invest | HCAPLUS |
| Cone, R | 1999 | 10 | 211 | Trends Endocrinol Me | HCAPLUS |
| Cummings, D | 2003 | 54 | 453 | Annu Rev Med | HCAPLUS |
| Dubern, B | 2001 | 139 | 204 | J Pediatr | HCAPLUS |
| Farooqi, I | 2000 | 83 | 31 | Arch Dis Child | MEDLINE |
| Farooqi, I | 2000 | 106 | 271 | J Clin Invest | HCAPLUS |
| Farooqi, I | 2003 | 348 | 1085 | N Engl J Med | HCAPLUS |
| Friedman, J | 2003 | 299 | 856 | Science | HCAPLUS |
| Gu, W | 1999 | 48 | 635 | Diabetes | HCAPLUS |
| Hinney, A | 1999 | 84 | 1483 | J Clin Endocrinol Me | HCAPLUS |
| Ho, G | 1999 | 274 | 35816 | J Biol Chem | HCAPLUS |
| Jacobson, P | 2002 | 87 | 4442 | J Clin Endocrinol Me | HCAPLUS |
| Lopata, M | 1984 | 12 | 5707 | Nucleic Acids Res | HCAPLUS |
| Miraglia Del Giudice, E | 2002 | 26 | 647 | Int J Obes Relat Met | HCAPLUS |
| Mountjoy, K | 1992 | 257 | 1248 | Science | HCAPLUS |
| Vaisse, C | 2000 | 106 | 253 | J Clin Invest | HCAPLUS |
| Vaisse, C | 1998 | 20 | 113 | Nat Genet | HCAPLUS |
| Vettor, R | 2002 | 25 | 836 | J Endocrinol Invest | HCAPLUS |
| Yeo, G | 2003 | 12 | 561 | Hum Mol Genet | HCAPLUS |
| Yeo, G | 1998 | 20 | 111 | Nat Genet | HCAPLUS |

L88 ANSWER 17 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:478218 HCAPLUS Full-text
DOCUMENT NUMBER: 141:138292
TITLE: Serum concentrations of adiponectin and leptin in patients with thyroid dysfunctions
AUTHOR(S): ***Santini, F.***; Marsili, A.; Mammoli, C.; Valeriano, R.; Scartabelli, G.; Pelosini, C.;

Giannetti, M.; Centoni, R.; Vitti, P.; ***Pinchera, A.***
CORPORATE SOURCE: Department of Endocrinology, University of Pisa, Pisa, Italy
SOURCE: Journal of Endocrinological Investigation (2004), 27(2), RC5-RC7
CODEN: JEIND7; ISSN: 0391-4097
PUBLISHER: Editrice Kurtis s.r.l.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Thyroid dysfunction is associated with metabolic changes that affect mass and adipocyte function, as well as lipid and carbohydrate metabolism Adipose tissue performs complex metabolic and endocrine functions. Leptin and adiponectin are two of the most important adipocytokines, both involved in the regulation of intermediate metabolism The aim of this study was to evaluate the relationships between thyroid status and circulating levels of the two adipose tissue hormones. We studied 15 patients with hyperthyroidism, 15 patients with hypothyroidism and 15 euthyroid subjects, all matched by sex, age and body mass index (BMI). Serum concns. of free thyroxine, free triiodothyronine, TSH, leptin and adiponectin and anthropometric parameters (weight, height, BMI) were assessed. No significant difference was found among the 3 groups, as assessed by Student's t-test, both for adiponectin and leptin. We conclude that metabolic changes associated with thyroid dysfunction are not related to variations in serum levels of adiponectin or leptin.
CC 14-8 (Mammalian Pathological Biochemistry)
Section cross-reference(s): 2
RETABLE


| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Arita, Y | 1999 | 257 | 79 | Biochem Biophys Res | HCAPLUS |
| Berg, A | 2002 | 13 | 84 | Trends Endocrinol Me | HCAPLUS |
| Biondi, B | 2002 | 12 | 505 | Thyroid | |
| Bruun, J | 2003 | 285 | 527 | Am J Physiol Endocri | |
| Corbetta, S | 1997 | 137 | 659 | Eur J Endocrinol | HCAPLUS |
| Delporte, M | 2002 | 367 | 677 | Biochem J | HCAPLUS |
| Dimitriadis, G | 2001 | 109 | 225 | Exp Clin Endocrinol | |
| Duntas, L | 2002 | 12 | 287 | Thyroid | HCAPLUS |
| Fasshauer, M | 2002 | 290 | 1084 | Biochem Biophys Res | HCAPLUS |
| Fernandez-Real, J | 2003 | 88 | 2714 | J Clin Endocrinol Me | HCAPLUS |
| Guerre-Millo, M | 2002 | 25 | 855 | J Endocrinol Invest | HCAPLUS |
| Hsueh, W | 2003 | 92 | 3 | Am J Cardiol | |
| Iglesias, P | 2003 | 59 | 621 | Clin Endocrinol (Oxf | HCAPLUS |
| Ineck, B | 2003 | 37 | 725 | Ann Pharmacother | HCAPLUS |
| Kautzky-Willer, A | 1999 | 29 | 395 | Eur J Clin Invest | HCAPLUS |
| Korbonits, M | 1998 | 49 | 569 | Clin Endocrinol (Oxf | MEDLINE |
| Kubota, N | 2002 | 277 | 25863 | J Biol Chem | HCAPLUS |
| Lindsay, R | 2002 | 360 | 57 | Lancet | HCAPLUS |
| Matsubara, M | 2000 | 7 | 50 | J Atheroscler Thromb | HCAPLUS |
| Matsuda, M | 2002 | 277 | 37487 | J Biol Chem | HCAPLUS |
| Prins, J | 2000 | 16 | 639 | Best Pract Res Clin | |
| Pucci, E | 2000 | 24 | 109 | Int J Obes Relat Met | |
| Ravussin, E | 2002 | 967 | 363 | Ann N Y Acad Sci | HCAPLUS |
| Sreenan, S | 1997 | 7 | 407 | Thyroid | MEDLINE |
| Tsao, T | 2002 | 440 | 213 | Eur J Pharmacol | HCAPLUS |
| Ukkola, O | 2002 | 80 | 696 | J Mol Med | HCAPLUS |
| Weyer, C | 2001 | 86 | 1930 | J Clin Endocrinol Me | HCAPLUS |
| Yamamoto, Y | 2002 | 103 | 137 | Clin Sci (Lond) | HCAPLUS |
| Yamauchi, T | 2001 | 7 | 941 | Nat Med | HCAPLUS |

| | | | | | |
|---|---|---|---|---|---|
| Yamauchi, T | 2003 | 423 | 762 | Nature | HCAPLUS |
| Yang, W | 2001 | 86 | 3815 | J Clin Endocrinol Me | HCAPLUS |
| Zhang, Y | 2002 | 1584 | 115 | Biochim Biophys Acta | HCAPLUS |

L88 ANSWER 18 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:474833 HCAPLUS Full-text
DOCUMENT NUMBER: 139:208054
TITLE: Role for inner ring deiodination preventing transcutaneous passage of thyroxine
AUTHOR(S): ***Santini, Ferruccio***; Vitti, Paolo; Chiovato, Luca; Ceccarini, Giovanni; Macchia, Marco; Montanelli, Lucia; Gatti, Gianluca; Rosellini, Veronica; Mammoli, Claudia; Martino, Enio; Chopra, Inder J.; Safer, Joshua D.; Braverman, Lewis E.; ***Pinchera, Aldo***
CORPORATE SOURCE: Department of Endocrinology, University of Pisa, Pisa, 56124, Italy
SOURCE: Journal of Clinical Endocrinology and Metabolism (2003), 88(6), 2825-2830
CODEN: JCEMAZ; ISSN: 0021-972X
PUBLISHER: Endocrine Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Creams containing thyroid hormone are commonly employed for cosmetic purposes. To verify whether T4 applied to the skin surface can enter the bloodstream either directly or as a metabolite, a cream containing L-T4 [3,5,3',5'-tetraiodothyronine (T4)] was self-applied by volunteers for 2 wk. No significant variations in urinary iodide, TSH, and serum (total and free) T4 and T3 concns. were observed at any time relative to pretreatment values, whereas rT3 concns. increased significantly 6 and 12 h after cream application. The increased rT3 concentration led the authors to investigate the presence of inner ring type III deiodinase (D3) activity in human skin. Using human surgical discard skin, the authors found that T4 can be carried across human epidermis in a liposome cream. Substantial inner ring deiodination was suggested by the fact that only 10% of transferred thyroid hormone remained as T4, and T3 was not detected. The authors then measured D3 activity in a surgical skin specimen. The Km for T3 was 1.74 nmol/L, and the maximum velocity was 23.5 fmol/μg microsomal protein/h. In conclusion, the authors' study indicates that normal human skin serves as a substantial, but incomplete, barrier to T4 passage. D3 plays an important role in augmenting T4 blockade by inactivating T4 to rT3.

CC 2-7 (Mammalian Hormones)
Section cross-reference(s): 63

RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Archer, C | 1998 | | 113 | Rook, Wilkinson, and | |
| Bashir, S | 2001 | 7 | 40 | Skin Res Technol | MEDLINE |
| Bates, J | 1999 | 140 | 844 | Endocrinology | HCAPLUS |
| Becker, K | 1997 | 138 | 2989 | Endocrinology | HCAPLUS |
| Bernal, J | 2002 | 25 | 268 | J Endocrinol Invest | MEDLINE |
| Bianco, A | 2002 | 23 | 38 | Endocr Rev | HCAPLUS |
| Burrow, G | 1994 | 20 | 1072 | N Engl J Med | |
| Calvo, R | 1998 | 801 | 150 | Brain Res | HCAPLUS |
| Campos-Barros, A | 1996 | 81 | 2179 | J Clin Endocrinol Me | HCAPLUS |
| Castro, M | 1985 | 76 | 1921 | J Clin Invest | HCAPLUS |
| Chopra, I | 2000 | | 121 | Werner, Ingbar's the | |
| Del Guerra, P | 1992 | 63 | 373 | Int Arch Occup Envir | MEDLINE |
| Fleisher, D | 1995 | 57 | 1293 | Life Sci | HCAPLUS |
| Germain, D | 1997 | 7 | 655 | Thyroid | |

| | | | | | |
|---|---|---|---|---|---|
| Hennemann, G | 2001 | 22 | 451 | Endocr Rev | HCAPLUS |
| Huang, T | 1988 | 23 | 196 | Pediatr Res | HCAPLUS |
| Kao, J | 1990 | 22 | 363 | Drug Metab Rev | HCAPLUS |
| Leonard, J | 2000 | | 136 | Werner, Ingbar's the | |
| Rapaka, R | 1981 | 70 | 131 | J Pharm Sci | HCAPLUS |
| Redelmeier, T | 1999 | | 2699 | Fitzpatrick's dermat | |
| Rendl, J | 1998 | 106 | S34 | Exp Clin Endocrinol | |
| Richard, K | 1998 | 83 | 2868 | J Clin Endocrinol Me | HCAPLUS |
| Riviere, J | 1992 | 81 | 601 | J Pharm Sci | HCAPLUS |
| Roti, E | 1981 | 53 | 498 | J Clin Endocrinol Me | HCAPLUS |
| Roti, E | 1981 | 94 | 183 | Trans Assoc Am Physi | HCAPLUS |
| Safer, J | 2001 | 11 | 717 | Thyroid | HCAPLUS |
| Salvatore, D | 1995 | 96 | 2421 | J Clin Invest | HCAPLUS |
| Santini, F | 1992 | 130 | 2325 | Endocrinology | HCAPLUS |
| Santini, F | 2001 | 144 | 577 | Eur J Endocrinol | HCAPLUS |
| Santini, F | 1992 | 74 | 1366 | J Clin Endocrinol Me | HCAPLUS |
| Santini, F | 1999 | 84 | 493 | J Clin Endocrinol Me | HCAPLUS |
| Villar, D | 2000 | 68 | 119 | Res Vet Sci | HCAPLUS |

L88 ANSWER 19 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:255396 HCAPLUS Full-text
DOCUMENT NUMBER: 141:289209
TITLE: In vitro assay of thyroid disruptors affecting TSH-stimulated adenylate cyclase activity
AUTHOR(S): ***Santini, F.***; Vitti, P.; Ceccarini, G.; Mammoli, C.; Rosellini, V.; Pelosini, C.; Marsili, A.; Tonacchera, M.; Agretti, P.; Santoni, T.; Chiovato, L.; ***Pinchera, A.***
CORPORATE SOURCE: Department of Endocrinology, Centro di Eccellenza AmbiSEN, University of Pisa, Pisa, Italy
SOURCE: Journal of Endocrinological Investigation (2003), 26(10), 950-955
CODEN: JEIND7; ISSN: 0391-4097
PUBLISHER: Editrice Kurtis s.r.l.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Several natural or synthetic chems. have been indicated as potential thyroid disruptors. The development of in vitro assays has been recommended to comprehensively assess the potential thyroid disrupting activity of a substance or a complex mixture In this study, 12 substances suspected for acting as thyroid disruptors were tested for their ability to inhibit TSH-stimulated cAMP production in vitro. Those substances producing an inhibition were further studied to establish the level at which they interfere with this step of thyroid cell function. Using Chinese hamster ovary cells (CHO) transfected with the recombinant human TSH receptor, a dose-dependent inhibition of TSH-stimulated adenylate cyclase activity was produced by 1,1-bis-(4-chlorphenyl)-2,2,2- trichloroethane (DDT), Aroclor 1254 and Melissa officinalis. All three substances also inhibited the cAMP production stimulated by TSH receptor antibody. Melissa officinalis produced a significant inhibition of TSH binding to its receptor and of antibody binding to TSH, while no significant changes were produced by Aroclor 1254 or DDT in these assays. These data suggest that principles contained in Melissa Officinalis may block the binding of TSH to its receptor by acting both on the hormone and the receptor itself, while DDT and Aroclor 1254 affect cAMP production mainly at post-receptor step. In conclusion, the authors have developed a set of in vitro assays that allow investigation into the effect of thyroid disruptors on the TSH-mediated activation of the cAMP cascade. These assays may be useful to identify the mechanism of action of thyroid disruptors, coming beside and supporting animal studies or epidemiol. surveys.

CC 2-1 (Mammalian Hormones)

RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Auf'mkolk, M | 1984 | 115 | 527 | Endocrinology | HCAPLUS |
| Bernal, J | 2002 | 25 | 268 | J Endocrinol Invest | MEDLINE |
| Bigsby, R | 1999 | 4 | 613 | Environ Health Persp | |
| Brucker-Davis, F | 1998 | 8 | 827 | Thyroid | MEDLINE |
| Byrne, J | 1987 | 121 | 520 | Endocrinology | HCAPLUS |
| Chiovato, L | 1994 | 17 | 809 | J Endocrinol Invest | HCAPLUS |
| Colborn, T | 2002 | 3 | 363 | Environ Health Persp | |
| De Vito, M | 1999 | 107 | 407 | Environ Health Persp | MEDLINE |
| Gaitan, E | 2000 | | 69 | Merk European Thyroi | |
| Howdeshell, K | 2002 | 3 | 337 | Environ Health Persp | |
| Jefferies, D | 1969 | 166 | 1278 | Science | HCAPLUS |
| Kohrle, J | 2000 | | 41 | Merk European Thyroi | |
| Koopman-Esseboom, C | 1994 | 36 | 468 | Pediatr Res | MEDLINE |
| Leatherland, J | 1998 | 14 | 41 | Toxicol Ind Health | HCAPLUS |
| Longnecker, M | 2000 | 11 | 249 | Epidemiology | MEDLINE |
| Marino, M | 2000 | 279 | 1295 | Am J Physiol Cell Ph | |
| Matsuura, N | 2001 | 45 | 1167 | Chemosphere | HCAPLUS |
| Moccia, R | 1977 | 198 | 425 | Science | HCAPLUS |
| Osius, N | 1999 | 107 | 843 | Environ Health Persp | HCAPLUS |
| Perret, J | 1990 | 171 | 1044 | Biochem Biophys Res | HCAPLUS |
| Persky, V | 2001 | 109 | 1275 | Environ Health Persp | HCAPLUS |
| Porterfield, S | 2000 | 3 | 433 | Environ Health Persp | |
| Sandau, C | 2002 | 110 | 411 | Environ Health Persp | HCAPLUS |
| Santini, F | 1995 | 110 | 195 | Mol Cell Endocrinol | HCAPLUS |
| Schumacher, U | 1993 | 29 | 103 | J Wildl Dis | MEDLINE |
| Tonacchera, M | 1996 | 44 | 621 | Clin Endocrinol (Oxf | HCAPLUS |
| Turusov, V | 2002 | 110 | 125 | Environ Health Persp | HCAPLUS |
| Vitti, P | 1982 | 5 | 179 | J Endocrinol Invest | HCAPLUS |
| Zacharewski, T | 1998 | 2 | 577 | Environ Health Persp | |
| Zoeller, T | 2002 | 3 | 355 | Environ Health Persp | |

L88 ANSWER 20 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:466632 HCAPLUS Full-text
DOCUMENT NUMBER: 137:16060
TITLE: Non-RIA methods for diagnosing thyroid conditions and for monitoring thyroxine therapy by analyzing TSH and thyroid hormones in urine
INVENTOR(S): Salhanick, Hilton A.; Hourihan, Joachim
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 32 pp., Cont.-in-part of U.S. Provisional Ser. No. 220,894.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | | DATE |
|---|---|---|---|---|---|
| US 2002076827 | A1 | 20020620 | US 2001-915931 | | 20010726 |
| PRIORITY APPLN. INFO.: | | | US 2000-220894P | P | 20000726 |

AB This invention provides a method of diagnosing a thyroid condition in a subject which comprises: determining the concentration of TSH in a urine sample by a method which is not a RIA; and comparing the concentration of TSH with a urinary concentration of TSH in a normal subject; wherein: (i) a concentration of TSH which is higher than the urinary concentration of TSH in

the normal subject diagnoses ***hypothyroidism*** in the subject; and (ii) a concentration of TSH which is lower than the urinary concentration of TSH in the normal subject diagnoses hyperthyroidism in the subject. The method used for the determination comprises: (1) contacting an agent capable of binding to TSH with the urine sample so as to bind TSH which is present in the sample to the agent; (2) removing unbound urine sample; (3) contacting the bound TSH with a detectable agent capable of binding to TSH so as to bind the detectable agent to the bound TSH; (4) removing unbound detectable agent; and (5) determining the amount of detectable agent which is bound to the TSH, thereby determining the amount of TSH in the urine sample. The binding agent is either an antibody or a receptor and can be immobilized on a gold particle, a latex particle, a magnetic particle or other solid phase. The detectable agent is a marker which is more specifically a colorimetric, a luminescent, or a fluorescent marker. Instead of TSH, triiodothyronine, ***triiodothyronine sulfate***, thyroxine, or thyroxine glucuronide can be determined This invention also proves a method of monitoring thyroxine therapy.

IC ICM G01N033-566
ICS G01N033-543
INCL 436501000
CC 2-1 (Mammalian Hormones)
IT Diagnosis
Hyperthyroidism
***Hypothyroidism***
***Thyroid gland, disease***
Urine analysis
(non-RIA methods for diagnosing ***thyroid*** conditions and for monitoring thyroxine therapy by analyzing TSH and ***thyroid*** hormones in urine)
IT 6893-02-3, Triiodothyronine 9002-71-5, TSH 21462-56-6, Thyroxine glucuronide ***31135-55-4***, ***Triiodothyronine sulfate***
RL: ANT (Analyte); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(non-RIA methods for diagnosing thyroid conditions and for monitoring thyroxine therapy by analyzing TSH and thyroid hormones in urine)

L88 ANSWER 21 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:717606 HCAPLUS Full-text
DOCUMENT NUMBER: 137:257342
TITLE: Cytotoxic effects of carboplatinum and epirubicin in the setting of an elevated serum thyrotropin for advanced poorly differentiated thyroid cancer
AUTHOR(S): ***Santini, Ferruccio***; Bottici, Valeria; Elisei, Rossella; Montanelli, Lucia; Mazzeo, Salvatore; Basolo, Fulvio; ***Pinchera, Aldo***; Pacini, Furio
CORPORATE SOURCE: Department of Endocrinology, University of Pisa, Pisa, 56124, Italy
SOURCE: Journal of Clinical Endocrinology and Metabolism (2002), 87(9), 4160-4165
CODEN: JCEMAZ; ISSN: 0021-972X
PUBLISHER: Endocrine Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Chemotherapy represents the only therapeutic option in most poorly differentiated thyroid carcinomas, although its effect is limited and short lasting. The aim of this study was to evaluate whether increasing the metabolic rate of thyroid cancer cells by TSH stimulation might result in higher response rate to chemotherapy. Fourteen patients with poorly differentiated thyroid carcinoma and nonfunctioning diffuse lung metastases

detected at computed tomog. scan, entered this study. A combination of carboplatinum and epirubicin was administered at 4- to 6-wk intervals for six courses. TSH stimulation was achieved by reduction of the daily dose of L-thyroxine resulting in mild hypothyroidism (eight patients) or by administration of recombinant human TSH (six patients). Two addnl. patients did not complete the therapeutic protocol due to severe hematol. side effects. Results were evaluated by comparison of lung computed tomog. scans before and after therapy. One patient had a complete remission. Five patients had partial remission, and seven patients had disease stabilization. One patient progressed to death. The overall rate of pos. responses was 37% that rose to 81% when including patients with stable disease. Serum thyroglobulin after chemotherapy declined more than 50% in six patients, with respect to basal levels. Apparently, no difference in the response rate was observed between exogenous or endogenous TSH stimulation. At the time of this anal., among the patients who completed the treatment courses, 9 of 14 patients (64.3%) are still alive (median survival from start of chemotherapy = 21 mo, range: 15-34). Six of these patients did not show progression of lung disease, whereas regrowth of lung metastases was observed in three patients after 19, 20, and 21 mo from chemotherapy, resp. Five patients died of their disease, including the one who had progression of lung disease during chemotherapy, three who died for brain or bone metastases, and one who died for refractory local tumor invasion. No progression of lung metastases was observed until death in these four patients. In conclusion, the response rate of poorly differentiated thyroid cancer to chemotherapy observed in this study was favorable and promising. TSH stimulation may have contributed to these results.

CC 1-6 (Pharmacology)

RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Ahuja, S | 1987 | 10 | 303 | J Endocrinol Invest | MEDLINE |
| Blum, R | 1996 | | 37 | Current cancer thera | |
| Carayon, P | 1980 | 51 | 915 | J Clin Endocrinol Me | MEDLINE |
| Casara, D | 1993 | 34 | 1626 | J Nucl Med | MEDLINE |
| De Besi, P | 1991 | 14 | 475 | J Endocrinol Invest | MEDLINE |
| Haugen, B | 1999 | 84 | 3877 | J Clin Endocrinol Me | HCAPLUS |
| Hoskin, P | 1987 | 10 | 187 | Radiother Oncol | MEDLINE |
| Mazzaferri, E | 1994 | 97 | 418 | Am J Med | MEDLINE |
| Morris, J | 1997 | 7 | 63 | Thyroid | MEDLINE |
| Pacini, F | 1999 | 81 | 463 | Biochimie | HCAPLUS |
| Pacini, F | 1984 | 10 | 911 | Drugs Exp Clin Res | |
| Pacini, F | 2001 | 86 | 4092 | J Clin Endocrinol Me | HCAPLUS |
| Pacini, F | 1987 | 28 | 1888 | J Nucl Med | MEDLINE |
| Pacini, F | 1994 | 1 | 921 | Oncol Rep | |
| Pacini, F | 1994 | 18 | 600 | World J Surg | MEDLINE |
| Pineda, J | 1995 | 80 | 1488 | J Clin Endocrinol Me | HCAPLUS |
| Pollina, L | 1996 | 73 | 139 | Br J Cancer | MEDLINE |
| Schlumberger, M | 1980 | 51 | 513 | J Clin Endocrinol Me | MEDLINE |
| Schlumberger, M | 1999 | 22 | 3 | J Endocrinol Invest | |
| Schlumberger, M | 1999 | 22 | 35 | J Endocrinol Invest | |
| Schlumberger, M | 1988 | 29 | 4790 | J Nucl Med | |
| Schlumberger, M | 1996 | 37 | 598 | J Nucl Med | HCAPLUS |
| Schlumberger, M | 1998 | 338 | 297 | N Engl J Med | MEDLINE |
| Schlumberger, M | 1999 | | | Thyroid tumors | |
| Shimaoka, K | 1985 | 56 | 2155 | Cancer | MEDLINE |

L88 ANSWER 22 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:108457 HCAPLUS Full-text

DOCUMENT NUMBER: 137:16734

TITLE: Effect of microsomal enzyme inducers on the biliary

excretion of triiodothyronine (T3) and its metabolites

AUTHOR(S): Vansell, Nichole R.; Klaassen, Curtis D.
CORPORATE SOURCE: Department of Pharmacology, Toxicology, University of Kansas Medical Center, Kansas City, KS, 66160-7417, USA

SOURCE: Toxicological Sciences (2002), 65(2), 184-191
CODEN: TOSCF2; ISSN: 1096-6080
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB It has been postulated that inducers of UDP-glucuronosyltransferase (UGT) decrease circulating thyroid hormone concns. by increasing their biliary excretion. The inducers pregnenolone-16α-carbonitrile (PCN), 3-methylcholanthrene (3MC), and Aroclor 1254 (PCB) are each effective at reducing serum thyroxine concns. However, only PCN treatment produces a marked increase in serum levels of TSH, whereas 3MC and PCB cause little to no increase in TSH. Excessive TSH elevation is considered the primary stimulus for thyroid tumor development in rats, yet the mechanism by which enzyme induction leads to TSH elevation is not fully understood. Whereas PCN, 3MC, and PCB all increase microsomal UGT activity toward T4, only PCN causes an increase in T3-UGT activity in vitro. The purpose of this study was to determine whether PCN, which increases serum TSH, causes an increase in the glucuronidation and biliary excretion of T3 in vivo. Male rats were fed control diet or diet containing PCN (1000 ppm), 3MC (250 ppm), or PCB (100 ppm) for 7 days. Animals were then given [125I]-T3, iv, and bile was collected for 2 h. Radiolabeled metabolites in bile were analyzed by reverse-phase HPLC with γ-detection. The biliary excretion of total radioactivity was increased up to 75% by PCN, but not by 3MC or PCB. Of the T3 excreted into bile, approx. 75% was recovered as T3-glucuronide, with remaining amts. represented as T3-sulfate, T2-sulfate, T3, and T2. Biliary excretion of T3-glucuronide was increased up to 66% by PCN, while neither 3MC nor PCB altered T3-glucuronide excretion. These findings indicate that PCN increases the glucuronidation and biliary excretion of T3 in vivo, and suggest that enhanced elimination of T3 may be the mechanism responsible for the increases in serum TSH caused by PCN.

CC 4-6 (Toxicology)

IT Bile
Carcinogens
Glucuronylation
Microsome
***Thyroid gland, neoplasm***
(effect of microsomal enzyme inducers on biliary excretion of triiodothyronine and metabolites)

IT 51-48-9, Thyroxine, biological studies 1041-01-6, 3,5-Diiodo-L-thyronine 6893-02-3, Triiodothyronine 6893-02-3D, Triiodothyronine, metabolites 9002-71-5, TSH 9030-08-4, UDP-glucuronosyltransferase 29919-72-0, Triiodothyronine glucuronide ***31135-55-4***, ***Triiodothyronine sulfate*** 64192-57-0, 3,3'-Diiodo-L-thyronine sulfate
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(effect of microsomal enzyme inducers on biliary excretion of triiodothyronine and metabolites)

RETABLE


| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Abe, M | 1998 | 174 | 186 | J Cell Physiol | HCAPLUS |
| Arand, M | 1991 | 77 | 97 | Chem Biol Interact | HCAPLUS |
| Barter, R | 1992 | 113 | 36 | Toxicol Appl Pharmac | HCAPLUS |
| Barter, R | 1994 | 128 | 9 | Toxicol Appl Pharmac | HCAPLUS |

| | | | | | |
|---|---|---|---|---|---|
| Bastomsky, C | 1976 | 98 | 1309 | Endocrinology | HCAPLUS |
| Bastomsky, C | 1977 | 101 | 292 | Endocrinology | HCAPLUS |
| Bastomsky, C | 1973 | 56 | 267 | J Endocrinol | HCAPLUS |
| Beetstra, J | 1991 | 128 | 741 | Endocrinology | HCAPLUS |
| Comer, C | 1985 | 80 | 427 | Toxicol Appl Pharmac | HCAPLUS |
| Connell, J | 1984 | 26 | 453 | Eur J Clin Pharmacol | HCAPLUS |
| Curran, P | 1991 | 12 | 135 | Endocr Rev | HCAPLUS |
| de Herder, W | 1988 | 122 | 153 | Endocrinology | HCAPLUS |
| Docter, R | 1997 | 138 | 1841 | Endocrinology | HCAPLUS |
| Dunn, R | 1999 | 290 | 319 | J Pharmacol Exp Ther | HCAPLUS |
| Eelkman Rooda, S | 1989 | 124 | 740 | Endocrinology | |
| Emi, Y | 1995 | 117 | 392 | J Biochem (Tokyo) | HCAPLUS |
| Fournel, S | 1987 | 17 | 445 | Xenobiotica | MEDLINE |
| Fujita, K | 1999 | 79 | 467 | Jpn J Pharmacol | HCAPLUS |
| Gorski, J | 1987 | 44 | 297 | Toxicology | HCAPLUS |
| Haque, S | 1991 | 10 | 515 | DNA Cell Biol | HCAPLUS |
| Hennemann, G | 1998 | 48 | 1 | Clin Endocrinol (Oxf | HCAPLUS |
| Hennemann, G | 1997 | | 75 | Pharmacotherapeutics | HCAPLUS |
| Henry, E | 1987 | 89 | 165 | Toxicol Appl Pharmac | HCAPLUS |
| Hood, A | 1999 | 160 | 163 | Toxicol Appl Pharmac | HCAPLUS |
| Hood, A | 2000 | 163 | 240 | Toxicol Appl Pharmac | HCAPLUS |
| Hood, A | 1999 | 50 | 45 | Toxicol Sci | HCAPLUS |
| Hood, A | 2000 | 55 | 78 | Toxicol Sci | HCAPLUS |
| Jones, H | 1993 | 67 | 622 | Arch Toxicol | HCAPLUS |
| Kanno, J | 1990 | 18 | 239 | Toxicol Pathol | HCAPLUS |
| Lilienblum, W | 1982 | 31 | 907 | Biochem Pharmacol | HCAPLUS |
| Liu, J | 1995 | 273 | 977 | J Pharmacol Exp Ther | HCAPLUS |
| Lu, R | 1996 | 270 | F332 | Am J Physiol | HCAPLUS |
| Masubuchi, N | 1997 | 54 | 1225 | Biochem Pharmacol | HCAPLUS |
| McClain, R | 1988 | 94 | 254 | Toxicol Appl Pharmac | HCAPLUS |
| McClain, R | 1989 | 99 | 216 | Toxicol Appl Pharmac | HCAPLUS |
| Mendoza, D | 1966 | 79 | 106 | Endocrinology | HCAPLUS |
| Moreno, M | 1994 | 344 | 143 | FEBS Lett | HCAPLUS |
| Rausch-Derra, L | 2001 | 33 | 1469 | Hepatology | HCAPLUS |
| Rondeel, J | 1995 | 61 | 421 | Neuroendocrinology | HCAPLUS |
| Rooda, S | 1989 | 125 | 2187 | Endocrinology | MEDLINE |
| Runge-Morris, M | 1998 | 109 | 315 | Chem Biol Interact | HCAPLUS |
| Rutgers, M | 1989 | 125 | 2175 | Endocrinology | HCAPLUS |
| Schuur, A | 1997 | 138 | 3727 | Endocrinology | HCAPLUS |
| Semler, D | 1989 | 98 | 263 | Toxicol Appl Pharmac | HCAPLUS |
| Sonderfan, A | 1988 | 265 | 208 | Arch Biochem Biophys | HCAPLUS |
| Ullrich, D | 1984 | 33 | 97 | Biochem Pharmacol | HCAPLUS |
| van Raaij, J | 1993 | 45 | 627 | Biochem Pharmacol | HCAPLUS |
| Visser, T | 1992 | 19 | 18 | Acta Med Austriaca | |
| Visser, T | 1996 | 23 | 10 | Acta Med Austriaca | MEDLINE |
| Visser, T | 1991 | 42 | 444 | Biochem Pharmacol | HCAPLUS |
| Visser, T | 1998 | 109 | 279 | Chem Biol Interact | HCAPLUS |
| Visser, T | 1983 | 112 | 1547 | Endocrinology | HCAPLUS |
| Visser, T | 1993 | 133 | 2177 | Endocrinology | HCAPLUS |
| Visser, T | 1993 | 315 | 65 | FEBS Lett | HCAPLUS |
| Visser, T | 1984 | 14 | 35 | Horm Metab Res Suppl | HCAPLUS |
| Visser, T | 1990 | | 255 | The Thyroid Gland | |
| Watkins, J | 1982 | 64 | 439 | Toxicol Appl Pharmac | HCAPLUS |
| Wilson, A | 1996 | 33 | 16 | Fundam Appl Toxicol | HCAPLUS |

L88 ANSWER 23 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:310978 HCAPLUS Full-text
DOCUMENT NUMBER: 136:379875
TITLE: Iopanoic acid rapidly controls type I amiodarone-induced thyrotoxicosis prior to

thyroidectomy

AUTHOR(S): Bogazzi, F.; Aghini-Lombardi, F.; Cosci, C.; Lupi, I.; ***Santini, F.***; Tanda, M. L.; Miccoli, P.; Basolo, F.; ***Pinchera, A.***; Bartalena, L.; Braverman, L. E.; Martino, E.

CORPORATE SOURCE: Department of Endocrinology and Metabolism, Boston Medical Center, Boston, MA, USA

SOURCE: Journal of Endocrinological Investigation (2002), 25(2), 176-180
CODEN: JEIND7; ISSN: 0391-4097

PUBLISHER: Editrice Kurtis s.r.l.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Amiodarone-induced thyrotoxicosis (AIT) may develop either in apparently normal thyroid glands (Type II AIT) or in the presence of sub-clin. thyroid abnormalities (either autonomous goiter or latent Graves' disease; Type I AIT). Mixed forms also occur. While Type I AIT is due to iodine-induced excess thyroid hormone synthesis, Type II AIT is a form of amiodarone (possibly iodine) -induced destructive thyroiditis. Type I AIT is usually treated by combined thion-amide and potassium perchlorate therapy, but may be resistant to therapy. On the other hand, Type II AIT often responds favorably to gluco-corticoids and may not require further therapy once euthyroidism has been restored. Not infrequently, however, AIT (especially Type I) is resistant to conventional treatment, and several weeks or months may elapse before euthyroidism is restored. Thyroidectomy has been carried out in Type I AIT patients, but thyroid surgery in thyrotoxic patients, especially those with underlying cardiac problems, carries a high surgical risk. In this study we describe 3 patients with Type I AIT, who were successfully treated with a short course of iopanoic acid (IOP), an oral cholecystog. agent, which is rich in iodine and is a potent inhibitor of 5'-deiodinase, resulting in a marked decrease in the peripheral tissue conversion of T4 to T3, in preparation for thyroid surgery. Euthyroidism was rapidly restored in 7-12 days, allowing a subsequent safe and uneventful thyroidectomy in all cases. These patients were then treated with L-T4 for their hypothyroidism and amiodarone was safely re-instituted. We suggest that IOP is the drug of choice in the rapid restoration of euthyroidism prior to definitive thyroidectomy in patients with drug resistant Type I AIT.

CC 1-10 (Pharmacology)
Section cross-reference(s): 8

RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Aghini-Lombardi, F | 1993 | 16 | 823 | J Endocrinol Invest | MEDLINE |
| Baeza, A | 1991 | 35 | 439 | Clin Endocrinol | MEDLINE |
| Bartalena, L | 2001 | 81 | 2930 | J Clin Edocrinol Met | |
| Bartalena, L | 2001 | 4 | 116 | J Endocrinol Invest | |
| Bogazzi, F | 1997 | 7 | 541 | Thyroid | MEDLINE |
| Braga, M | 2001 | 86 | 1853 | J Clin Endocrinol Me | HCAPLUS |
| Brennan, M | 1987 | 102 | 1062 | Surgery | MEDLINE |
| Claxton, S | 2000 | 70 | 155 | Aust NZJ Surg | |
| Daniels, G | 2001 | 86 | 3 | J Clin Endocrinol Me | HCAPLUS |
| Di Matola, T | 2000 | 85 | 4323 | J Clin Endocrinol Me | HCAPLUS |
| Doval, H | 1994 | 344 | 493 | Lancet | MEDLINE |
| Farwell, A | 1990 | 263 | 1526 | JAMA | MEDLINE |
| Martino, E | 1984 | 101 | 28 | Ann Intern Med | MEDLINE |
| Martino, E | 2001 | 2 | 240 | Endocr Rev | |
| Martino, E | 1991 | 14 | 847 | J Endocrinol Invest | MEDLINE |
| Mulligan, D | 1993 | 114 | 1114 | Surgery | MEDLINE |
| Reiffel, J | 1994 | 17 | 103 | Clin Cardiol | MEDLINE |

| | | | | | |
|---|---|---|---|---|---|
| Robuschi, G | 1986 | 9 | 287 | J Endocrinol Invest | MEDLINE |
| Wang, Y | 1987 | 65 | 679 | J Clin Endocrinol Me | MEDLINE |
| Wu, S | 1978 | 46 | 691 | J Clin Endocrinol Me | HCAPLUS |

L88 ANSWER 24 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:424213 HCAPLUS Full-text
DOCUMENT NUMBER: 135:179581
TITLE: Autoantibodies from patients with autoimmune thyroid disease do not interfere with the activity of the human iodide symporter gene stably transfected in CHO cells
AUTHOR(S): Tonacchera, Massimo; Agretti, Patrizia; Ceccarini, Giovanni; Lenza, Rosanna; Refetoff, Samuel; ***Santini, Ferruccio; Pinchera, Aldo***; Chiovato, Luca; Vitti, Paolo
CORPORATE SOURCE: Dipartimento di Endocrinologia e Metabolismo, Ortopedia e Traumatologia, Medicina del Lavoro, Universita di Pisa, Pisa, 56124, Italy
SOURCE: European Journal of Endocrinology (2001), 144(6), 611-618
CODEN: EJOEEP; ISSN: 0804-4643
PUBLISHER: BioScientifica
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The human sodium iodide symporter (hNIS) is a candidate autoantigen in autoimmune thyroid diseases. To investigate the possible existence of autoantibodies able to interfere with the biol. activity of hNIS, an assay was developed using a cell line stably expressing hNIS. HNIS complementary cDNA cloned in pcDNA3 and a neomycin resistance gene vector were co-transfected into CHO cells. After selection with geneticin, a cell line termed PA4, showing the highest level of Na125I uptake, was characterized. The time course of iodide uptake was evaluated by incubating PA4 cells with 10 μmol/l NaI and 0.1 μCl Na125I for a period up to 90 min. The accumulation of iodide increased linearly between 2 and 10 min, reaching a plateau at 45 min. The curve of iodide efflux mirrored that of iodide influx. Both perchlorate and thiocyanate inhibited iodide uptake in PA4 cells in a dose-dependent manner starting from concns. as low as 0.01 and 0.1 μmol/l resp. and complete inhibition was obtained at concns. of 100 μmol/l perchlorate and 1000 μmol/l thiocyanate. The sensitivity of the inhibition assay was further improved using both inhibitors after 5 min incubation and in the absence of cold NaI. Included in the study were 42 patients with Graves' disease (25 had active hyperthyroidism, 10 were euthyroid, and 7 had hypothyroidism); 34 patients with Hashimoto's thyroiditis (1 was euthyroid, 4 had subclin. hypothyroidism, and 29 were overtly hypothyroid); and 19 with atrophic thyroiditis (all hypothyroid). Four out of 8 whole sera from patients with Hashimoto's thyroiditis, and 8 out of 25 whole sera from patients with Graves' disease caused an inhibition of iodide uptake in PA4 cells >20% but also in 4 out of 15 sera from normal subjects. This inhibition activity exerted by sera from patients and controls was lost after dialyzing against buffer. Accordingly, IgGs purified from sera of all patients with Graves' disease and with Hashimoto's thyroiditis or atrophic thyroiditis were devoid of any effect on iodide uptake. The authors thus believe that autoantibodies able to block the function of hNIS are very rare.

CC 15-8 (Immunochemistry)
RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Ajjan, R | 1998 | 83 | 1217 | Journal of Clinical | HCAPLUS |

| | | | | | |
|---|---|---|---|---|---|
| Ajjan, R | 2000 | 85 | 2020 | Journal of Clinical | HCAPLUS |
| Chiovato, L | 1990 | 71 | 40 | Journal of Clinical | MEDLINE |
| Chiovato, L | 1994 | 17 | 809 | Journal of Endocrino | HCAPLUS |
| Dai, G | 1996 | 379 | 458 | Nature | HCAPLUS |
| Davies, T | 2000 | | 518 | The Thyroid:a Fundam | |
| Endo, T | 1996 | 228 | 199 | Biochemical and Biop | HCAPLUS |
| Endo, T | 1996 | 224 | 92 | Biochemical and Biop | HCAPLUS |
| Ho, S | 2000 | 85 | 3937 | Journal of Clinical | |
| Konishi, J | 1983 | 57 | 544 | Journal of Clinical | MEDLINE |
| Kosugi, S | 1996 | 227 | 94 | Biochemical and Biop | HCAPLUS |
| Levy, O | 1998 | 30 | 195 | Journal of Bioenerge | HCAPLUS |
| Morris, J | 1997 | 4 | 527 | Thyroid | |
| Perret, J | 1990 | 171 | 1044 | Biochemical and Biop | HCAPLUS |
| Pohlenz, J | 2000 | 85 | 2366 | Journal of Clinical | HCAPLUS |
| Pohlenz, J | 1998 | 101 | 1028 | Journal of Clinical | HCAPLUS |
| Raspe, E | 1995 | 132 | 399 | European Journal of | HCAPLUS |
| Russo, D | 1997 | 20 | 36 | Journal of Endocrino | HCAPLUS |
| Saito, T | 1997 | 82 | 3331 | Journal of Clinical | HCAPLUS |
| Smanik, P | 1996 | 226 | 339 | Biochemical and Biop | HCAPLUS |
| Weiss, S | 1984 | 114 | 1090 | Endocrinology | HCAPLUS |

L88 ANSWER 25 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:424209 HCAPLUS Full-text
DOCUMENT NUMBER: 135:147641
TITLE: Evidence for a role of the type III-iodothyronine deiodinase in the regulation of 3,5,3'-triiodothyronine content in the human central nervous system
AUTHOR(S): ***Santini, Ferruccio; Pinchera, Aldo*** ; Ceccarini, Giovanni; Castagna, Maura; Rosellini, Veronica; Mammoli, Claudia; Montanelli, Lucia; Zucchi, Vanna; Chopra, Inder J.; Chiovato, Luca
CORPORATE SOURCE: Department of Endocrinology and Metabolism, University of Pisa, Pisa, 56124, Italy
SOURCE: European Journal of Endocrinology (2001), 144(6), 577-583
CODEN: EJOEEP; ISSN: 0804-4643
PUBLISHER: BioScientifica
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Objective: Thyroid hormone is essential for maintaining normal neurol. functions both during development and in adult life. Type III-iodothyronine deiodinase (D3) degrades thyroid hormones by converting thyroxine and 3,5,3'-triiodothyronine (T3) to inactive metabolites. A regional expression of D3 activity has been observed in the human central nervous system (CNS), and a critical role for D3 has been suggested in the regulation of local T3 content in concert with other enzymes. Design: This study was undertaken to further characterize D3 activity in human CNS and to understand its role in the local regulation of T3 content. Methods: Autoptic specimens from various areas of human CNS were obtained 6-27 h postmortem from 14 donors who died from cardiovascular accident, neoplastic disease or infectious disease. D3 was determined by measuring the conversion of T3 to 3,3'-diiodothyronine. The T3 content was measured by RIA in ethanol exts., using a specific antiserum. Results: High levels of D3 activity were observed in hippocampus and temporal cortex, lower levels being found in the thalamus, hypothalamus, midbrain cerebellum, parietal and frontal cortex, and brain stem. An inverse relationship between D3 activity and T3 content in these areas was demonstrated. Conclusion: We have concluded that D3 contributes to the local regulation of T3 content in the human CNS.

CC 2-7 (Mammalian Hormones)

RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Arem, R | 1993 | 42 | 1102 | Metabolism | MEDLINE |
| Bates, J | 1999 | 140 | 844 | Endocrinology | HCAPLUS |
| Baumgartner, A | 1997 | 16 | 25 | Neuropsychopharmacol | HCAPLUS |
| Becker, K | 1997 | 138 | 2989 | Endocrinology | HCAPLUS |
| Bernal, J | 1995 | 133 | 390 | European Journal of | HCAPLUS |
| Calvo, R | 1998 | 801 | 150 | Brain Research | HCAPLUS |
| Campos-Barros, A | 1996 | 81 | 2179 | Journal of Clinical | HCAPLUS |
| Campos-Barros, A | 1997 | 68 | 795 | Journal of Neurochem | HCAPLUS |
| Chopra, I | 1971 | 50 | 2033 | Journal of Clinical | HCAPLUS |
| Chopra, I | 1996 | | 111 | Werner and Ingbar's | |
| Escobar-Morreale, H | 1995 | 96 | 2828 | Journal of Clinical | HCAPLUS |
| Esfandiari, A | 1992 | 131 | 1682 | Endocrinology | HCAPLUS |
| Everts, M | 1993 | 132 | 1278 | Endocrinology | HCAPLUS |
| Huang, S | 2000 | 343 | 185 | New England Journal | MEDLINE |
| Huang, T | 1986 | 35 | 272 | Metabolism | HCAPLUS |
| Itagaki, Y | 1990 | 71 | 340 | Journal of Clinical | MEDLINE |
| Kaplan, M | 1980 | 106 | 567 | Endocrinology | HCAPLUS |
| Kaplan, M | 1981 | 109 | 397 | Endocrinology | HCAPLUS |
| Karmarkar, M | 1993 | 57 | 291S | American Journal of | |
| Koehrle, J | 1999 | 151 | 103 | Molecular and Cellul | |
| Koopdonk-Kool, J | 1996 | 81 | 2154 | Journal of Clinical | HCAPLUS |
| Larsen, P | 1981 | 2 | 87 | Endocrine Reviews | HCAPLUS |
| Leonard, J | 1996 | | 125 | Werner and Ingbar's | |
| Mori, K | 1993 | 77 | 1198 | Journal of Clinical | MEDLINE |
| Morreale de Escobar, G | 1994 | 134 | 2410 | Endocrinology | HCAPLUS |
| Obregon, M | 1981 | 109 | 908 | Endocrinology | HCAPLUS |
| Richard, K | 1998 | 83 | 2868 | Journal of Clinical | HCAPLUS |
| Rodriguez-Pena, A | 1999 | 40 | 497 | Journal of Neurobiol | HCAPLUS |
| Roti, E | 1981 | 53 | 498 | Journal of Clinical | HCAPLUS |
| Salvatore, D | 1995 | 96 | 2421 | Journal of Clinical | HCAPLUS |
| Santini, F | 1992 | 130 | 2325 | Endocrinology | HCAPLUS |
| Santini, F | 1992 | 74 | 1366 | Journal of Clinical | HCAPLUS |
| Santini, F | 1999 | 84 | 493 | Journal of Clinical | HCAPLUS |
| Silva, J | 1984 | 73 | 898 | Journal of Clinical | HCAPLUS |
| Stulp, M | 1998 | 142 | 67 | Molecular and Cellul | HCAPLUS |
| Tu, H | 1999 | 140 | 784 | Endocrinology | HCAPLUS |
| Visser, T | 1983 | 71 | 992 | Journal of Clinical | HCAPLUS |
| Visser, T | 1986 | 9 | 17 | Journal of Endocrino | |
| Wu, S | 1976 | 43 | 682 | Journal of Clinical | HCAPLUS |

L88 ANSWER 26 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:706523 HCAPLUS Full-text
DOCUMENT NUMBER: 135:367023
TITLE: 3,3'-Diiodothyronine sulfate excretion in maternal urine reflects fetal thyroid function in sheep
AUTHOR(S): Wu, Sing-Yung; Huang, Wen-Sheng; Eisher, Delbert A.; Florsheim, Warner H.; Kashiwai, Kent; Polk, Daniel H.
CORPORATE SOURCE: Nuclear Medicine and Medicine Services, Department of Veterans' Affairs Medical Center, Log Beach, CA, 90822, USA
SOURCE: Pediatric Research (2001), 50(3), 358-364
CODEN: PEREBL; ISSN: 0031-3998
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors have shown that there is significant fetal-to-maternal transfer of sulfated metabolites of thyroid hormone after fetal infusion of a pharmacol. amount T3 or sulfated T3 in late pregnancy in sheep. The transferred iodothyronine sulfoconjugate, i.e., 3,3'-diiodothyronine sulfate (T2S), of fetal origin appears in maternal sheep urine. The present study was carried out to assess the contribution of T2S of fetal origin to the urinary pool in ewes. Eighteen date-bred ewes (mean gestational age of 115 d) and their twin fetuses were divided into four groups. In group I (control), both ewes (M) and their fetuses (F) were sham operated for thyroidectomy (Tx). In group II, the ewes (MTx) and, in group III, the fetuses (FTx) were subjected to Tx. In group IV (MTx · FTx), both the ewe and fetus had Tx. After 10-12 d, fetal and/or maternal ***hypothyroidism*** were confirmed by serum thyroxine (<15 nmol/L) measurements. In addition, the authors infused radioactive T3 without disturbing the T3 pool in three singleton near-term fetuses and assessed the amount of radioactive iodothyronine that appeared in maternal urine (MU). After infusing [125I-3'],3,5-T3 via fetal vein to the near-term normal fetuses, radioactive T2S was identified as the major metabolite in MU by HPLC and T2S-specific antibody. MU T2S excretion (pmol/mmol creatinine) was significantly reduced by FTx and MTx-FTx but not by MTx. In addition, pos. correlations were found between MU T2S excretion and fetal serum thyroxine and T3 concns. but not with maternal serum thyroxine or T3 levels. T2S of fetal origin contributes significantly to the MU pool.

CC 2-7 (Mammalian Hormones)

IT Blood serum
***Thyroid gland***
Urine
(diiodothyronine sulfate excretion in maternal urine reflects fetal thyroid function in sheep)

IT 1041-01-6, Diiodothyronine 6893-02-3, Triiodothyronine
***31135-55-4, Triiodothyronine sulfate***
RL: ***BAC (Biological activity or effector, except adverse)***; BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(diiodothyronine sulfate excretion in maternal urine reflects fetal thyroid function in sheep)

RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Bates, J | 1999 | 140 | 844 | Endocrinology | HCAPLUS |
| Castro, M | 1985 | 76 | 1921 | J Clin Invest | HCAPLUS |
| Chopra, I | 1992 | 75 | 189 | J Clin Endocrinol Me | MEDLINE |
| Chopra, I | 1994 | | 119 | Thyroid Hormone Meta | HCAPLUS |
| Cortelazzi, D | 1999 | 141 | 570 | Eur J Endocrinol | HCAPLUS |
| Eelkman-Rooda, S | 1988 | 9 | 125 | J Immunoassay | MEDLINE |
| Galton, V | 1999 | 103 | 979 | J Clin Invest | HCAPLUS |
| Hurd, R | 1993 | 133 | 1951 | Endocrinology | HCAPLUS |
| Kaptein, E | 1997 | 138 | 5136 | Endocrinology | HCAPLUS |
| Kirk, R | 1982 | | 112 | Experimental Design | |
| Lanni, A | 1998 | 436 | 407 | Eur J Physiol | HCAPLUS |
| Leonard, J | 1997 | 7 | 147 | Thyroid | MEDLINE |
| Maxwell, S | 1990 | | 242 | Designing Experiment | |
| Mol, J | 1985 | 117 | 1 | Endocrinology | HCAPLUS |
| Moreno, M | 1997 | 505 | 529 | J Physiol | HCAPLUS |
| Nakamura, Y | 1977 | 18 | 1112 | J Nucl Med | HCAPLUS |
| Polk, D | 1994 | 266 | E892 | Am J Physiol | HCAPLUS |
| Rudolph, A | 1970 | 26 | 289 | Circ Res | MEDLINE |
| Sack, J | 1976 | 10 | 169 | Pediatr Res | HCAPLUS |
| Santini, F | 1993 | 133 | 105 | Endocrinology | HCAPLUS |
| Santini, F | 1999 | 84 | 493 | J Clin Endocrinol Me | HCAPLUS |

| | | | | | |
|---|---|---|---|---|---|
| Visser, T | 1994 | | 85 | Thyroid Hormone Meta | HCAPLUS |
| Wu, S | 1998 | 178 | 886 | Am J Obstet Gynecol | HCAPLUS |
| Wu, S | 1993 | 265 | E115 | Am J Physiol | HCAPLUS |
| Wu, S | 1995 | 268 | E33 | Am J Physiol | HCAPLUS |
| Wu, S | 1999 | 277 | E915 | Am J Physiol | HCAPLUS |
| Wu, S | 1992 | 131 | 1751 | Endocrinology | HCAPLUS |
| Wu, S | 1976 | 43 | 682 | J Clin Endocrinol Me | HCAPLUS |
| Wu, S | 1993 | 76 | 1625 | J Clin Endocrinol Me | HCAPLUS |
| Wu, S | 1994 | 78 | 1505 | J Clin Endocrinol Me | HCAPLUS |
| Wu, S | 2000 | 48 | 847 | Pediatr Res | HCAPLUS |
| Wu, S | 1992 | 2 | 101 | Thyroid | MEDLINE |
| Wu, S | 1991 | | 293 | Thyroid Hormone Meta | |

L88 ANSWER 27 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:104153 HCAPLUS Full-text
DOCUMENT NUMBER: 130:262454
TITLE: Serum iodothyronines in the human fetus and the newborn: evidence for an important role of placenta in fetal thyroid hormone homeostasis
AUTHOR(S): ***Santini, Ferruccio***; Chiovato, Luca; Ghirri, Paolo; Lapi, Paola; Mammoli, Claudia; Montanelli, Lucia; Scartabelli, Giovanna; Ceccarini, Giovanni; Coccoli, Luca; Chopra, Inder J.; Boldrini, Antonio; ***Pinchera, Aldo***
CORPORATE SOURCE: Department of Endocrinology and Metabolism, University of Pisa, Pisa, 56124, Italy
SOURCE: Journal of Clinical Endocrinology and Metabolism (1999), 84(2), 493-498
CODEN: JCEMAZ; ISSN: 0021-972X
PUBLISHER: Endocrine Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The pattern of circulating iodothyronines in the fetus differs from that in the adult, being characterized by low levels of serum T3. In this study, concns. of various iodothyronines were measured in sera from neonates of various postconceptional age (PA). Obtained in cord sera at birth (PA, 24-40 wk), reflecting the fetal pattern, were compared with those found during extrauterine life in newborns of 5 days or more of postnatal life (PA, 27-46 wk). The main findings are: Starting at 30 wk of PA, serum levels increase linearly during extrauterine life; and at 40 wk, they are more than 200% of those measured in cord sera from newborns of equivalent PA. Serum reverse T3 (rT3) levels during fetal life are higher than those measured during extrauterine life; but they significantly decrease, starting at 30 wk of PA. Serum T3 sulfate (T3S) does not significantly differ between the two groups, showing the highest values at 28-30 wk of PA, and significantly decreasing at 30-40 wk. T3S levels are directly correlated with rT3, both in fetal and extrauterine life, whereas a significant neg. correlation between T3S and T3 is found only during extrauterine life. In conclusion: changes in serum concns. of iodothyronines in umbilical cord and during post-natal life indicate that maturation of extrathyroidal type I-iodothyronine monodeiodinase (MD) accelerates, starting at 30 wk of PA; high levels of type III-MD activity in fetal tissues prevent the rise of serum T3, whereas they maintain high levels of rT3 during intrauterine life; an important mechanism leading to the transition from the fetal to the postnatal thyroid hormone balance is a sudden decrease in type III-MD activity; because placenta contains a high amount of type III-MD, it is conceivable that placenta contributes to maintain low T3 and high rT3 serum concns. during fetal life and that its removal at birth is responsible for most changes in iodothyronine metabolism occurring afterwards.

CC 2-7 (Mammalian Hormones)
RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Abuid, J | 1973 | 52 | 1195 | J Clin Invest | HCAPLUS |
| Anderson, R | 1994 | | 85 | Thyroid hormone meta | |
| Burrow, G | 1994 | 331 | 1072 | N Engl J Med | HCAPLUS |
| Chiovato, L | 1991 | 14 | 957 | J Endocrinol Invest | MEDLINE |
| Chopra, I | 1992 | 75 | 189 | J Clin Endocrinol Me | MEDLINE |
| Chopra, I | 1993 | 76 | 145 | J Clin Endocrinol Me | HCAPLUS |
| Chopra, I | 1974 | 54 | 583 | J Clin Invest | HCAPLUS |
| Contempre, B | 1993 | 77 | 1719 | J Clin Endocrinol Me | HCAPLUS |
| Dubowitz, L | 1997 | 77 | 1 | J Pediatr | |
| Eelkman-Rooda, S | 1988 | 124 | 740 | Endocrinology | |
| Fisher, D | 1977 | 33 | 59 | Horm Res | |
| Fisher, D | 1969 | 48 | 1670 | J Clin Invest | HCAPLUS |
| Fisher, D | 1986 | 9 | 1 | Thyroid Today | |
| Fuse, Y | 1996 | 8 | 1 | Reprod Fertil Dev | HCAPLUS |
| Harris, A | 1978 | 103 | 2216 | Endocrinology | HCAPLUS |
| Huang, T | 1988 | 23 | 196 | Pediatr Res | HCAPLUS |
| Koopdonk-Kool, J | 1996 | 81 | 2154 | J Clin Endocrinol Me | HCAPLUS |
| Lopresti, J | 1994 | 78 | 688 | J Clin Endocrinol Me | HCAPLUS |
| Morreale De Escobar, G | 1987 | 26 | 12 | Horm Res | HCAPLUS |
| Mortimer, R | 1996 | 81 | 2247 | J Clin Endocrinol Me | HCAPLUS |
| Otten, M | 1983 | 221 | 81 | Science | HCAPLUS |
| Polk, D | 1986 | 251 | 151 | Am J Physiol | |
| Polk, D | 1994 | 266 | E892 | Am J Physiol | HCAPLUS |
| Polk, D | | | 223 | Thyroid hormone meta | |
| Porterfield, S | 1993 | 14 | 94 | Endocr Rev | HCAPLUS |
| Richard, K | 1997 | | S-117 | Proc of the 70th Ann | |
| Roti, E | 1981 | 53 | 498 | J Clin Endocrinol Me | HCAPLUS |
| Sack, J | 1976 | 10 | 169 | Pediatr Res | HCAPLUS |
| Salvatore, D | 1996 | 98 | 692 | J Clin Invest | |
| Santini, F | 1992 | 131 | 1689 | Endocrinology | HCAPLUS |
| Santini, F | 1992 | 131 | 2521 | Endocrinology | HCAPLUS |
| Santini, F | 1996 | 134 | 45 | Eur J Endocrinol | HCAPLUS |
| Santini, F | 1992 | 74 | 1366 | J Clin Endocrinol Me | HCAPLUS |
| Santini, F | 1993 | 76 | 1583 | J Clin Endocrinol Me | MEDLINE |
| Thorpe-Beeston, J | 1991 | 324 | 532 | N Engl J Med | MEDLINE |
| van Wassenaer, A | 1993 | 129 | 139 | Acta Endocrinol | HCAPLUS |
| Wu, S | 1978 | 103 | 235 | Endocrinology | HCAPLUS |
| Wu, S | 1993 | 76 | 1625 | J Clin Endocrinol Me | HCAPLUS |
| Wu, S | 1986 | 8 | 43 | J Dev Physiol | HCAPLUS |

L88 ANSWER 28 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:58043 HCAPLUS Full-text
DOCUMENT NUMBER: 128:188475
TITLE: Acute effects of intravenous amiodarone on sulfate metabolites of thyroid hormones in arrhythmic patients
AUTHOR(S): Iervasi, Giorgio; Clerico, Aldo; Manfredi, Cristina; Sabatino, Laura; Biagini, Andrea; Chopra, Inder J.
CORPORATE SOURCE: Laboratory of Cardiovascular Endocrinology, CNR Institute of Clinical Physiology, Pisa, 56100, Italy
SOURCE: Clinical Endocrinology (Oxford) (1997), 47(6), 699-705
CODEN: CLECAP; ISSN: 0300-0664
PUBLISHER: Blackwell Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Factors that contribute to the remarkably rapid decrease in serum T3 and increase in reverse T3 (rT3) levels during illness, fasting, or treatment with some drugs (e.g., amiodarone) are not clear. To understand better the effect

of acute amiodarone administration on T3 metabolism, especially the sulfation pathway, the authors performed a prospective study in 8 arrhythmic in-patients treated with a loading dose of amiodarone. Amiodarone was administered by i.v. infusion of 20 mg/kg/day on day 1 and 10 mg/kg/day on day 2, followed by 600 mg/day orally throughout the study. Two serum samples for amiodarone and hormone assays (thyroid hormones, TSH, and the sulfate metabolites of 3'-T1, 3,3'-T2, and T3) were collected before the start of therapy, every 12 h during the first 3 days of amiodarone administration, and then once a day for 2-10 days. Eight patients (4 men and 4 women, aged 44-82 yr), who were treated with amiodarone because of cardiac dysrhythmia, were enrolled in the study. Serum concns. of total T4 significantly increased in the last 3 days of the study (ANOVA). However, serum total T3 progressively and significantly decreased throughout the study (ANOVA). Serum free thyroid hormone concns. (freeT3 and freeT4) did not significantly change during the study. Serum rT3 (ANOVA) and TSH (ANOVA) rapidly and progressively increased throughout the study. Starting from the first 24 h, serum concns. of T3 sulfate (T3-S) significantly and progressively increased from (mean) 0.057 nM under basal conditions to 0.089 nM after 5 days of amiodarone therapy (ANOVA). Since total T3 levels progressively decreased throughout the study, the ratio of the T3-S and total T3 values progressively increased from 4.8% under basal conditions to 10.6% after 5 days of amiodarone therapy (ANOVA, repeated measures). Basal serum concns. of sulfate metabolites of T2 (T2-S, 2.22 nM) and T1 (T1-S, 1.29 nM) did not significantly change throughout the study. The authors' data indicate that a loading dose of i.v. amiodarone in patients with cardiac dysrhythmias is followed by a very rapid and progressive increase in circulating T3-S levels, possibly due to an inhibition of type 1-iodothyronine de-iodinase. Since T2-S and T1-S, common final metabolites of the thyroid hormone sulfation pathways remained unchanged, the authors' data suggest that the total amount of thyroid hormone degraded by sulfation pathways remains unaltered during amiodarone treatment. Finally the authors' findings are compatible with the view that sulfation represents an important pathway for T3 metabolism in vivo in man.

CC 1-8 (***Pharmacology***)
Section cross-reference(s): 2

IT Heart, ***disease***
(arrhythmia; acute effects of i.v. amiodarone on sulfate metabolites of ***thyroid*** hormones in arrhythmic patients)

IT 5817-39-0, Reverse triiodothyronine 6893-02-3, Triiodothyronine 9002-71-5, Thyrotropin ***31135-55-4***, ***Triiodothyronine sulfate*** 64192-57-0 64192-58-1
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(acute effects of i.v. amiodarone on sulfate metabolites of thyroid hormones in arrhythmic patients)

RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|---|---|---|---|---|---|
| Chopra, I | 1992 | 75 | 189 | Journal Clinical End | MEDLINE |
| Chopra, I | 1996 | | | Program Annual Meeti | |
| de Groot, L | 1996 | | 61 | The thyroid and its | |
| Eedkman, R | 1988 | 124 | 740 | Endocrinology | |
| Eedkman, R | 1984 | 9 | 125 | Journal of Immunoass | |
| Engler, D | 1984 | 5 | 151 | Endocrine Revue | HCAPLUS |
| Figge, H | 1990 | 30 | 588 | Journal of Clinical | MEDLINE |
| Gill, J | 1992 | 43 | 69 | Drugs | MEDLINE |
| Hershman, J | 1986 | 111 | 193 | Acta Endocrinologica | MEDLINE |
| Iervasi, G | 1996 | 26 | 382 | European Journal of | HCAPLUS |
| Iervasi, G | 1997 | 82 | 275 | Journal Clinical End | HCAPLUS |
| Kannan, R | 1990 | 122 | 249 | Acta Endocrinologica | HCAPLUS |

| | | | | | |
|---|---|---|---|---|---|
| Lambert, M | 1982 | 55 | 1058 | Journal Clinical End | MEDLINE |
| Leonard, J | 1995 | | 125 | Werner and Ingbar's | |
| Lopresti, J | 1991 | 73 | 703 | Journal Clinical End | MEDLINE |
| Lopresti, J | 1994 | 78 | 688 | Journal Clinical End | HCAPLUS |
| Lopresti, J | 1987 | | | Significance of trii | |
| Manfredi, C | 1995 | 15 | 87 | International Journa | HCAPLUS |
| Mol, J | 1985 | 117 | 1 | Endocrinology | HCAPLUS |
| Mol, J | 1985 | 117 | 8 | Endocrinology | HCAPLUS |
| Otten, M | 1983 | 221 | 81 | Science | HCAPLUS |
| Polikar, R | 1993 | 87 | 1435 | Circulation | MEDLINE |
| Unger, J | 1993 | 233 | 435 | Journal of Internal | MEDLINE |
| Visser, T | 1983 | 112 | 1547 | Endocrinology | HCAPLUS |

L88 ANSWER 29 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:519721 HCAPLUS Full-text
DOCUMENT NUMBER: 125:191543
TITLE: Transfection with the cDNA of the human thyrotropin receptor of a poorly differentiated rat thyroid cell line (FRT)
AUTHOR(S): Elisei, R.; ***Pinchera, A.***; Chiovato, L.; Mammoli, C.; Agretti, P.; Romei, C.; ***Santini, F.***; Bendinelli, G.; Fiore, E.; et al.
CORPORATE SOURCE: Istituto di Endocrinologia, University Pisa, 56018, Italy
SOURCE: Journal of Endocrinological Investigation (1996), 19(4), 230-235
CODEN: JEIND7; ISSN: 0391-4097
PUBLISHER: Editrice Kurtis s.r.l.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A cell line derived from the Fisher rat thyroid (FRT), that does not have functional TSH receptor, was stably transfected with the cDNA of the human TSH receptor (hTSH-R). In wild FRT cells TSH (1-1000 mU/l) was unable to increase cAMP production, while 10-10000 nmol/l forskolin elicited a 10-30 fold cAMP stimulation. Two of the transfected clones were responsive to TSH in terms of cAMP production In particular, the FRT-R3 transfected clone showed the highest sensitivity to the hormone with a 10 fold cAMP increase over the basal at 100 mU/l TSH. The Northern blot anal. using a 2.4 kbp cDNA probe for the hTSH-R showed a band corresponding to the mRNA of TSH receptor in FRT-R3 cells, but not in wild FRT cells. In both cell types TSH was ineffective in stimulating growth assayed by 3H-thymidine incorporation into DNA. Hybridization with a probe for thyroperoxidase on polymerase chain reaction products after reverse transcription of mRNA showed that FRT-R3, as well as FRT cells, do not have a transcript for thyroperoxidase. In conclusion, the insertion of the hTSH-R cDNA in the genome of poorly differentiated rat thyroid cells results in the recovery of TSH-dependent adenylate cyclase, but not other differentiated thyroid cell functions.
CC 13-2 (Mammalian Biochemistry)
Section cross-reference(s): 1

L88 ANSWER 30 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:315493 HCAPLUS Full-text
DOCUMENT NUMBER: 120:315493
TITLE: Studies on the in vitro cytotoxic effect of amiodarone
AUTHOR(S): Chiovato, Luca; Martino, Enio; Tonacchera, Massimo; ***Santini, Ferruccio***; Lapi, Paola; Mammoli, Claudia; Braverman, Lewis E.; ***Pinchera, Aldo***
CORPORATE SOURCE: Ist. Endocrinol., Univ. Pisa, Tirrenia-Pisa, 56018, Italy
SOURCE: Endocrinology (1994), 134(5), 2277-82

CODEN: ENDOAO; ISSN: 0013-7227
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Amiodarone, a potent antiarrhythmic drug, contains 37.2% iodine by weight and may induce either hypo- or hyperthyroidism. The high iodine content of amiodarone may be responsible for both complications, but a cytotoxic effect of the drug on the thyroid resulting in thyroiditis has been reported. In the present study the cytotoxic effect of amiodarone was evaluated in three culture systems with different biol. properties: 1) a strain of rat thyroid cells (FRTL-5 cells) that maintains most differentiated functions of normal thyroid cells, including an active iodide pump, but an inability to organify iodide; 2) a line of Chinese hamster ovary (CHO) fibroblasts; and 3) freshly prepared primary cultures of human thyroid follicles (hTF)h that trap and organify iodide. Cells were radiolabeled with 51Cr and incubated for 24 h with medium alone, medium plus amiodarone (3.75-200 μM, medium plus an iodinated radiog. contrast agent (sodium diatrizoate; 7.5-200 μM), or medium plus potassium iodide (7.5-300 μM). At concns. ranging from 75-200 μM, amiodarone induced a significant and dose-dependent release of 51Cr in FRTL-5 cells. In contrast, diatrizoate or KI had no cytotoxic effect on FRTL-5 cells. In the same molar concns., amiodarone was also cytotoxic to CHO cells. In hTF, the release of 51Cr produced by amiodarone occurred at a lower concentration (37.5 vs. 75 μM) and was significantly greater than that in FRTL-5 cells. The cytotoxic effects of amiodarone in hTF was partially, but significantly, reduced by methimazole, an inhibitor of iodide organification. In the FRTL-5 cell culture system, amiodarone also produced a dramatic inhibition of TSH-stimulated cell growth. This growth-inhibiting effect of amiodarone was evident at low concns. (3.75-7.5 μmol/L) of the drug, which did not produce cytotoxicity. In conclusion, 1) amiodarone had a cytotoxic effect in CHO fibroblasts, a nonthyroid cell line; 2) this cytotoxic effect occurred in thyroid cells independent of their ability to organify iodide; 3) however, the toxic effect of amiodarone was greater and occurred at a low molar concentration in freshly prepared human thyroid follicles that trap and organify iodide; and 4) in the latter culture system, methimazole, an inhibitor of iodide organification, partially, but significantly, reduced the cytotoxic effect of amiodarone. These data suggest that thyroid cytotoxicity produced by amiodarone is mainly due to a direct effect of the drug on thyroid cells, but excess iodide released from the drug may contribute to its toxic action.

CC 1-8 (Pharmacology)

L88 ANSWER 31 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:646873 HCAPLUS Full-text
DOCUMENT NUMBER: 121:246873
TITLE: Uptake of triiodothyronine sulfate and suppression of thyrotropin secretion in cultured anterior pituitary cells
AUTHOR(S): Everts, M. E.; Visser, T. J.; van Buuren, J. C. J.; Docter, R.; de Jong, M.; Krenning, E. P.; Hennemann, G.
CORPORATE SOURCE: Med. Sch., Erasmus Univ., Rotterdam, 3000 DR, Neth.
SOURCE: Metabolism, Clinical and Experimental (1994), 43(10), 1282-6
CODEN: METAAJ; ISSN: 0026-0495
DOCUMENT TYPE: Journal
LANGUAGE: English

AB To investigate the uptake of triiodothyronine sulfate (T3S) and its effect on TSH-releasing hormone (TRH)-induced TSH secretion, anterior pituitary cells were isolated from euthyroid rats and cultured for 3 days in medium containing 10% fetal calf serum. Incubation was performed at 37° in medium containing

0.5% bovine serum albumin (BSA). Exposure of the pituitary cells to TRH (0.1 μmol/L) for 2 h stimulated TSH secretion by 176%. This effect was reduced by approx. 45% after a 2-h preincubation with T3 (0.001 to 1 μmol/L). A significant inhibitory effect of T3S on TRH-induced TSH release was only observed at a concentration of 1 μmol/L. The uptake of [125I]T3 after 1 h of incubation was reduced by 40% by simultaneous addition of 10 nmol/L unlabeled T3, whereas 1 μmol/L T3S was required to obtain a reduction of the [125I]T3 uptake by 34%. The amount of T3 present in the unlabeled T3S preparation was 0.25% as determined by RIA. When pituitary cells were incubated for 1 h with [125I]T3S or [125I]T3 (both 50,000 cpm/0.25 mL), the uptake of [125I]T3S expressed as a percentage of the dose was 0.04%, whereas that of [125I]T3 amounted to 3.0%. In contrast, when hepatocytes were incubated for 1 h with [125I]T3S, the uptake amounted to 5.1%, whereas that of [125I]T3 was 22.1%. Furthermore, [125I]T3S was a rapidly deiodinated (iodide production, 14.9%) as [125I]T3 (12.1%) by hepatocytes. It is concluded that T3S is poorly taken up by pituitary cells, and the suppressive effect of high concns. of T3S on TRH-induced TSH secretion and on [125I]T3 uptake can be explained by slight contamination with T3. Thus, it appears that T3S has only a minor biol. effect, if any, on the pituitary.

CC 2-7 (Mammalian Hormones)

IT *31135-55-4*, Triiodothyronine sulfate
RL: ***BAC (Biological activity or effector, except adverse)***; BSU (Biological study, unclassified); BIOL (Biological study)
(triiodothyronine sulfate uptake and suppression of TSH secretion in cultured anterior pituitary cells)

L88 ANSWER 32 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:341437 HCAPLUS Full-text
DOCUMENT NUMBER: 122:130416
TITLE: Detection of antibodies blocking thyrotropin effect using Chinese hamster ovary cells transfected with the cloned human TSH receptor
AUTHOR(S): Chiovato, L.; Vitti, P.; Bendinelli, G.; ***Santini, F.***; Fiore, E.; Capaccioli, A.; Tonacchera, M.; Mammoli, C.; Ludgate, M.; ***Pinchera, A.***
CORPORATE SOURCE: Istituto di Endocrinologia, University of Pisa, Pisa, Italy
SOURCE: Journal of Endocrinological Investigation (1994), 17(10), 809-16
CODEN: JEIND7; ISSN: 0391-4097
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Chinese hamster ovary (CHO) cells transfected with the cloned human TSH receptor (CHO-R) were used to develop an assay to detect thyroid autoantibodies blocking the TSH-dependent cAMP production (TSHBAb). The study group included patients with goitrous Hashimoto's thyroiditis (HT) and subjects with atrophic thyroiditis (AT). In the HT group, both patients with subclin. hypothyroidism (HT-SH) and overt hypothyroidism (HT-H) were represented. Normal subjects served as controls. IgG was prepared from serum by double chromatog. on DEAE-Sephadex. CHO-R cells were seeded in 96-well plates and were cultured for 48 h before the assay in RPMI-1640 medium plus 1 mmol/L glutamine, 10% fetal calf serum, and 0.4 g/L geneticin. In the assay for TSHBAb, CHO-R cells were incubated with IgG alone (0.5-2 mg/mL), TSH alone (0.2-625 mU/L), or IgG plus TSH; all samples were diluted in hypotonic medium containing 0.5 mmol/L isobutyl-methylxanthine (IBMX). After 2 h of incubation at 37° in 5% CO2 -95% air atmospheric, TSH-stimulation was quantified by measuring extracellular cAMP by a RIA. IgGs from normal subjects did not modify the stimulation of adenylate cyclase produced by TSH, the results obtained ranging between -30% and +18% (mean -3%). All IgGs producing an

inhibition >2SD from the mean of controls (>25%) were considered pos. for blocking antibodies. TSHBAb were detected in 1/8 (12.5%) patients with HT-SH, in 7/30 (23.3%) with HT-H, and in 16/47 (34.0%) patients with AT. When the same IgGs were tested in FRTL-5 cells, TSHBAb were detected in 1/8 (12.5%) patients with HT-SH, in 5/30 (16.6%) with HT-H, and in 15/47 (31.9%) with AT. TSHBAb results in CHO-R cells showed a good correlation with those in FRTL-5 cells, but 3/24 IgGs were pos. for TSHBAb in CHO-R cells and neg. in FRTL-5 cells. Using the radioreceptor assay, TSH-binding inhibiting antibodies were detected in 17/24 (70.8%) sera that contained TSHBAb when tested in the CHO-R cell system. Thyroid stimulating antibody (TSAb) and TSHBAb, that coexisted in 5 IgGs, were simultaneously detected using CHO-R cells. These IgGs belonged to patients in whom spontaneous hypothyroidism developed after hyperthyroidism, or vice versa. Thus, a new in vitro assay for the detection of TSHBAb was developed using CHO-R cells. The sensitivity of this assay is slightly greater than that obtained in FRTL-5 cells and definitely greater than that of the radioreceptor assay. CHO-R cells have the advantage of expressing the human TSH receptor and of requiring less cumbersome procedures for cell culture than FRTL-5 cells.

CC 15-1 (Immunochemistry)

L88 ANSWER 33 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:672223 HCAPLUS Full-text
DOCUMENT NUMBER: 121:272223
TITLE: Bioactivity of sulfoconjugated iodothyronines
AUTHOR(S): Spaulding, Stephen Waasa
CORPORATE SOURCE: College Med., SUNY, Buffalo, NY, 14215, USA
SOURCE: Thyroid Horm. Metab. [Proc. Int. Conf.], 2nd (1994), Meeting Date 1993, 139-53. Editor(s): Wu, Sing-Yung; Visser, Theo J. CRC: Boca Raton, Fla.
CODEN: 60ROAZ
DOCUMENT TYPE: Conference; General Review
LANGUAGE: English

AB A review, with 22 refs., on evidence that deconjugation of triiodothyronine sulfate occurs in vivo and in vitro and on some of the ways used to test whether triiodothyronine sulfate has a direct action in in-vitro systems where thyroid hormones are known to have an effect.

CC 2-0 (Mammalian Hormones)

IT *31135-55-4*, Triiodothyronine sulfate
RL: ***BAC (Biological activity or effector, except adverse)***; BSU (Biological study, unclassified); BIOL (Biological study)
(bioactivity of sulfoconjugated iodothyronines)

L88 ANSWER 34 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:672222 HCAPLUS Full-text
DOCUMENT NUMBER: 121:272222
TITLE: The role of sulfation and desulfation in thyroid hormone metabolism
AUTHOR(S): Chopra, Inder J.; Santini, Ferruccio; Wu, Sing-Yung; Hurd, Robert E.
CORPORATE SOURCE: Sch. Med., Univ. California, Los Angeles, CA, 90024, USA
SOURCE: Thyroid Horm. Metab. [Proc. Int. Conf.], 2nd (1994), Meeting Date 1993, 119-38. Editor(s): Wu, Sing-Yung; Visser, Theo J. CRC: Boca Raton, Fla.
CODEN: 60ROAZ
DOCUMENT TYPE: Conference; General Review
LANGUAGE: English

AB A review, with 35 refs., on RIAs for ***triiodothyronine sulfate*** (T3S), thyroxine sulfate and reverse ***triiodothyronine sulfate***, the interaction between sulfoconjugates of iodothyronines and iodothyronine monodeiodinases, T3S in

***hypothyroidism***, T3S desulfation in tissues, triiodothyronine sulfation in tissues, and the biol. activity of T3S.

CC 2-0 (Mammalian Hormones)

IT ***31135-55-4, Triiodothyronine sulfate***
77074-49-8, Thyroxine sulfate 79349-15-8
RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)
(sulfation and desulfation in thyroid hormone metabolism)

L88 ANSWER 35 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:1066 HCAPLUS Full-text
DOCUMENT NUMBER: 120:1066
TITLE: A study of the 3,5,3'-triiodothyronine sulfation activity in the adult and the fetal rat
AUTHOR(S): Hurd, Robert E.; Santini, Ferruccio; Lee, Brenda; Naim, Pauline; Chopra, Inder J.
CORPORATE SOURCE: Cent. Health Sci., Univ. California, Los Angeles, CA, 90024-1682, USA
SOURCE: Endocrinology (1993), 133(5), 1951-5
CODEN: ENDOAO; ISSN: 0013-7227
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors have employed an in vitro assay for studying the T3 sulfation activity in rat tissues. The assay measures by RIA the generation of T3 sulfate (T3S) during incubation of T3 with cytosol of rat tissues as the source of phenol sulfotransferase(s) and 3-phosphoadenosine-5'- phosphosulfate as the sulfate donor. The conversion of T3 to T3S proceeded rapidly for 30 min at 37°, and the optimal pH of the reaction was 8.0. Heating the cytosol at 44° for 15 min decreased T3S production to 63% of its value at 37°. T3 sulfation activity was plentiful in rat liver, brain, and kidney, but little activity was demonstrable in other tissues. The Km and maximum velocity of the hepatic conversion of T3 to T3S were 114 μM and 159 pmol/mg protein/h, resp. There was a marked inhibition of the conversion of T3 to T3S with salicylamide, 3'-monoiodothyronine, thyronine, and rT3; the IC50 of these inhibitors was: approximated 15, < 0.1, 9.5, and 43 μM, resp. On day 17 of gestation, the T3 to T3S conversion activity was more abundant in fetal skin than in other fetal tissues. However, the activity decreased in fetal skin while it increased in fetal liver, kidney, and brain nearer to term on day 20. Placenta demonstrated lower T3 to T3S conversion activity than did several fetal or maternal tissues. There was no effect of ***hypothyroidism*** or hyperthyroidism on T3 sulfation activity. Apparently. T3 sulfation activity in the rat is: (1) most abundant in liver, kidney, and brain tissues of the adult; (2) inhibited more avidly by 3'-monoiodothyronine than by other thyronines; (3) very abundant in fetal skin early in gestation; and (4) little affected by the thyroidal status of the animal.

CC 2-7 (Mammalian Hormones)

IT ***31135-55-4***
RL: ANT (Analyte); ANST (Analytical study)
(determination of, by RIA)

L88 ANSWER 36 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:574095 HCAPLUS Full-text
DOCUMENT NUMBER: 115:174095
TITLE: Selective inhibition of glucuronidation by 2,2,2-triphenylethyl-UDP in isolated rat hepatocytes: conjugation of harmol, 3,3',5-triiodothyronine, and N-hydroxy-2-acetylaminofluorene
AUTHOR(S): Noort, Daan; Meijer, Ellen A.; Visser, Theo J.; Meerman, John H. N.; Van der Marel, Gijs A.; Van Boom,

Jacques H.; Mulder, Gerard J.
CORPORATE SOURCE: Cent. Bio-Pharm. Sci., Univ. Leiden, Leiden, 2300 RA, Neth.
SOURCE: Molecular Pharmacology (1991), 40(2), 316-20
CODEN: MOPMA3; ISSN: 0026-895X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB 2,2,2-Triphenylethyl-UDP (TPEU) was synthesized as an analog of the transition state of the glucuronidation reaction catalyzed by UDP-glucuronosyltransferase; it contains both a uridine and an acceptor substrate moiety. It inhibits rat liver microsomal UDP- glucuronosyltransferase [Eur. J. Biochem. 188:309-312 (1990)]. In the present work, TPEU was tested as an inhibitor of glucuronidation in intact rat hepatocytes. Two phenols (harmol and 3,3',5-triiodothyronine) and a hydroxamic acid (N-hydroxy-2-acetylaminofluorene) were used as substrates for glucuronidation. The glucuronidation of these substrates was strongly decreased by TPEU at 0.3-5 mM. Up to 5 mM TPEU did not kill the cells, as shown by unimpaired trypan blue exclusion at the end of the incubation. When glucuronidation was inhibited, the sulfation of harmol increased, as did the production of reactive species generated from N-hydroxy-2- acetylaminofluorene that bind to cellular macromols. This indicates that a decreased substrate consumption by loss of glucuronidation leads to increased conversion by competing pathways. The results show, therefore, that TPEU is an effective inhibitor of glucuronidation in this cellular system in vitro.
CC 1-4 (***Pharmacology***)
Section cross-reference(s): 4
IT 27067-62-5, Harmol sulfate ***31135-55-4***
RL: FORM (Formation, nonpreparative)
(formation of, in hepatocytes, triphenylethyl-UDP inhibition of glucuronidation in relation to)

L88 ANSWER 37 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:527851 HCAPLUS Full-text
DOCUMENT NUMBER: 115:127851
TITLE: Regulation by TSH and thyroid stimulating antibodies of TPO expression
AUTHOR(S): Chiovato, L.; Vitti, P.; Mammoli, C.; ***Santini, F.***; Tonacchera, M.; Lapi, P.; Cucchi, P.; Carayon, P.; ***Pinchera, A.***
CORPORATE SOURCE: Univ. Pisa, Pisa, 56018, Italy
SOURCE: Colloque INSERM (1990), 207(Thyroperoxidase Thyroid Autoimmun.), 43-51
CODEN: CINMDE; ISSN: 0768-3154
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The mechanisms responsible for the expression of the thyroid microsomal/peroxidase autoantigen (M/TPO-Ag) were studied in FRTL-5 cells and in primary cultures of human thyroid cells prepared from Graves' or nontoxic goiters. The expression of M/TPO-Ag in thyroid cells is dependent on TSH stimulation, through pathways which involve cAMP production, mRNA formation and protein synthesis. Thyroid-stimulating antibody reproduces this effect of TSH, and estradiol and NaI have no direct influence on the expression of the M/TPO-Ag.
CC 2-7 (Mammalian Hormones)
Section cross-reference(s): 15

L88 ANSWER 38 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1989:437589 HCAPLUS Full-text
DOCUMENT NUMBER: 111:37589
TITLE: Antibodies to human thyroid peroxidase in autoimmune

thyroid disease: studies with a cloned recombinant complementary deoxyribonucleic acid epitope

AUTHOR(S): Ludgate, M.; Mariotti, S.; Libert, F.; Dinsart, C.; Piccolo, P.; ***Santini, F.***; Ruf, J.; ***Pinchera, A.***; Vassart, G.

CORPORATE SOURCE: Univ. Libre Bruxelles, IRIBHN, Brussels, Belg.

SOURCE: Journal of Clinical Endocrinology and Metabolism (1989), 68(6), 1091-6
CODEN: JCEMAZ; ISSN: 0021-972X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Previous studies carried out by screening a λgt11 human thyroid cDNA library with serum samples from selected patients with Hashimoto's thyroiditis and a polyclonal antibody to porcine thyroid peroxidase (TPO) confirmed, at the mol. level, that TPO is a major component of the thyroid microsomal antigen (M). That investigation led to the isolation of a clone (C2) which encodes an 85-amino acid segment of TPO and harbors a major epitope recognized by serum from several patients with autoimmune thyroid disease that contained anti-M autoantibodies (MAb). In this study, C2 antigen that was produced as a β-galactosidase fusion protein was used to establish an enzyme-linked immunoabsorbent assay for the detection of anti-C2 autoantibodies (C2Ab). C2Ab then were assayed in 191 patients with different autoimmune and nonautoimmune thyroid disorders, and 50 patients with nonthyroidal autoimmune diseases. The results were compared with the titers of anti-TPO antibodies (TPOAb; as detected by monoclonal antibody-assisted RIA) and MAb (as detected by passive hemagglutination). Pos. C2Ab was found in the serum of 85 of 136 (63%) patients whose serum contained TPOAb and/or MAb. A pos. correlation was found between the levels of C2Ab and those of TPOAb or MAb, which was independent of the type of underlying autoimmune thyroid disorder. Low levels of C2Ab also were found in 10 of 105 (9%) serum samples that did not contain TPOAb. Western blot anal. carried out on the latter samples showed that in 2 samples the apparent C2Ab reactivity was due to the presence of antibodies reacting with β-galactosidase. Thus, the authors confirmed the validity of screening λgt11 cDNA human thyroid libraries to better characterize thyroid autoantigens and demonstrated the feasibility of using recombinant proteins to establish diagnostic assays for autoantibodies.

CC 15-3 (Immunochemistry)

L88 ANSWER 39 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1989:405445 HCAPLUS Full-text

DOCUMENT NUMBER: 111:5445

TITLE: Thyroid autoantigens and their relevance in the pathogenesis of thyroid autoimmunity

AUTHOR(S): ***Pinchera, Aldo***; Mariotti, Stefano; Vitti, Paolo; Marcocci, Claudio; Chiovato, Luca; Fenzi, Gianfranco; ***Santini, Ferruccio***

CORPORATE SOURCE: Univ. Pisa, Tirrenia, 56018, Italy

SOURCE: Biochimie (1989), 71(2), 237-45
CODEN: BICMBE; ISSN: 0300-9084

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review with 45 refs. of the TSH receptor, thyroglobulin, and thyroid peroxidase as autoantigens important in the pathogenesis of thyroid autoimmunity. Thyroid autoantibodies may interfere in some peculiar thyroid function activities.

CC 15-0 (Immunochemistry)

L88 ANSWER 40 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1989:405279 HCAPLUS Full-text

DOCUMENT NUMBER: 111:5279
TITLE: Effects of thyroid hormone on sulfate activation pathway in neonatal ***hypothyroid*** rats
AUTHOR(S): Iwamura, Chiyo
CORPORATE SOURCE: Med. Sch., Osaka City Univ., Osaka, Japan
SOURCE: Osaka-shi Igakkai Zasshi (1988), 37(2), 367-83
CODEN: OIGZDE; ISSN: 0386-4103
DOCUMENT TYPE: Journal
LANGUAGE: Japanese

AB In neonatal ***hypothyroid*** rats, there is a reduction of sulfuric compds., sulfatide or acid mucopolysaccharide. Sulfuric compds. are sulfated by PAPS (3'-phosphoadenosine 5'-phosphosulfate), synthesized by the sulfate activation pathway. The effect of thyroid hormone on the sulfate activation pathway is neonatal ***hypothyroid*** rats was studied. Incorporation of 35SO4 into brain lipid in the ***hypothyroid*** rats was decreased by 65% of the control rats and the cartilage level of the isotope was decreased by 64%. The in vitro incorporation of 35SO4 into 5'-phosphoadenosine sulfate (APS), PAPS and endogeneous acceptor was determined The accumulated [35S]PAPS in exts. of the neonatal ***hypothyroid*** rats was decreased. The accumulated [35S]APS was increased and the percentage of conversion of APS to PAPS was decreased in the neonatal ***hypothyroid*** rats. ATP sulfurylase assay in the cartilage or brain exts. showed no differences. Neonatal ***hypothyroidism*** reduced the concentration of sulfatide in brain lipid. In the cartilage of ***hypothyroid*** rats, the concentration of mucopolysaccharides with low sulfate content was increased. ATP sulfurylase activity in cultured chondrocytes with T3, T4-free medium showed no difference from those with T3-supplemented medium, whereas the APS kinase activity in cultured chondrocytes with T3, T4-free medium was reduced. Apparently, in cases of neonatal ***hypothyroidism***, the reduction of sulfatide or mucopolysaccharide results from a decreased PAPS synthesis and a defective conversion of APS to PAPS. Thyroid hormones might affect APS kinase and alter the metabolism of sulfuric compds.

CC 14-8 (Mammalian Pathological Biochemistry)
ST neonate ***hypothyroidism*** sulfate activation thyroid hormone
IT Brain, composition
(lipids of, sulfate incorporation into, in neonatal ***hypothyroidism***)
IT Sulfatides
RL: BIOL (Biological study)
(of brain, in neonatal ***hypothyroidism***)
IT Sulfolipids
RL: BIOL (Biological study)
(of brain, sulfate incorporation into, in neonatal ***hypothyroidism***)
IT Chondrocyte
(phosphoadenosine sulfate kinase of, in neonatal ***hypothyroidism*** , thyroid hormones in relation to)
IT Newborn
(sulfate activation pathway in ***hypothyroidism*** in, thyroid hormones effects on)
IT Thyroid hormones
RL: BIOL (Biological study)
(sulfate activation pathway in neonatal ***hypothyroidism*** response to)
IT ***Hypothyroidism***
(sulfate activation pathway in neonatal, thyroid hormones effects on)
IT Cartilage
(sulfate incorporation into, in neonatal ***hypothyroidism***)
IT Mucopolysaccharides, biological studies
RL: BIOL (Biological study)
(acid, in neonatal ***hypothyroidism***)

IT 14808-79-8, Sulfate, biological studies
RL: BIOL (Biological study)
(activation pathway, in neonatal ***hypothyroidism***, thyroid hormone effects on)
IT 482-67-7, 3'-Phosphoadenosine 5'-phosphosulfate
RL: FORM (Formation, nonpreparative)
(formation of, defect in, in neonatal ***hypothyroidism***)
IT 9012-39-9, ATP sulfurylase
RL: BIOL (Biological study)
(of brain and cartilage, in neonatal ***hypothyroidism***)
IT 9012-38-8, 5'-Phosphoadenosine sulfate kinase
RL: BIOL (Biological study)
(of chondrocytes, in neonatal ***hypothyroidism***, thyroid hormones in relation to)
IT 51-48-9, Thyroxine, biological studies 6893-02-3, ***Triiodothyronine***
RL: BIOL (Biological study)
(***sulfate*** activation pathway in neonatal ***hypothyroidism*** response to)
IT 485-84-7
RL: BIOL (Biological study)
(sulfate incorporation into, in neonatal ***hypothyroidism***)

L88 ANSWER 41 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1981:564973 HCAPLUS Full-text
DOCUMENT NUMBER: 95:164973
TITLE: Urinary excretion of free and conjugated 3',5'-diiodothyronine and 3,3'-diiodothyronine
AUTHOR(S): Faber, J.; Busch-Sorensen, M.; Rogowski, P.; Kirkegaard, C.; Siersbaek-Nielsen, K.; Friis, T.
CORPORATE SOURCE: Med. Dep. E, Frederiksberg Hosp., Copenhagen, DK-2000, Den.
SOURCE: Journal of Clinical Endocrinology and Metabolism (1981), 53(3), 587-93
CODEN: JCEMAZ; ISSN: 0021-972X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Radioimmunoassays (RIAs) for estimation of 3',5'-diiodothyronine (I) and 3,3'-diiodothyronine (II) in human urine were established. The urinary excretion of both glucuronide and sulfate conjugates of I, II and of T4, T3, and rT3 were estimated by means of enzymic deconjugation. In healthy controls, the mean excretion (picomoles/24 h) of free T4 was 1820, free T3 813, free rT3 77, free I 13, and free II 674. The total excretion of free and conjugated T4 was 2941, T3 1283, rT3 791, I 709, and II 2688. Significant amts. of sulfated T4 and T3 could not be demonstrated, whereas the excretion of sulfated rT3 was higher than that of glucuronidated rT3. In contrast, glucuronidated and sulfated I as well as glucuronidated and sulfated II were found in the urine in equal amts. In hyperthyroidism, the excretions of free and glucuronidated iodothyronines were increased, whereas the increase of the excretions of sulfated iodothyronines were less pronounced, only reaching statistical significance for II. In ***hypothyroidism***, the excretions of both free, glucuronidated, and sulfated iodothyronines were reduced. Significant amts. of sulfated T4 and T3 could not be demonstrated in urine from hyperthyroid or ***hypothyroid*** patients. The amts. of free iodothyronines excreted in the urine vary considerably, suggesting active renal handling. The amts. of urinary glucuronidated and sulfated conjugates of the different iodothyronines studied vary considerably and are affected by thyroid function.
CC 9-5 (Biochemical Methods)
Section cross-reference(s): *2*, 13, 14
ST urine diiodothyronine detn excretion; radioimmunoassay diiodothyronine;

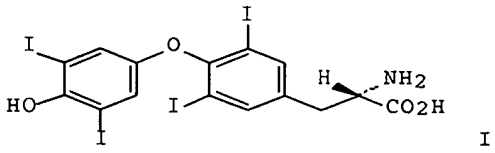
thyronine urine excretion; sulfate thyronine excretion; glucuronide thyronine excretion; hyperthyroidism iodothyronine excretion; ***hypothyroidism*** iodothyronine excretion; thyroid function iodothyronine excretion

IT ***Thyroid gland***
(function of, free and conjugated iodothyronines excretion in relation to)

IT Hyperthyroidism
***Hypothyroidism***
(iodothyronine excretion in, free and conjugated)

IT 21462-56-6 29919-72-0 30329-13-6 ***31135-55-4*** 64192-57-0
76166-54-6 77074-49-8 79349-15-8 79349-16-9 79349-17-0
RL: ANST (Analytical study)
(excretion of, thyroid function in relation to)

L88 ANSWER 42 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1981:58673 HCAPLUS Full-text
DOCUMENT NUMBER: 94:58673
TITLE: Activation and inactivation of thyroxine by cultured rat hepatoma cells
AUTHOR(S): Sorimachi, Kenji; Niwa, Akira; Yasumura, Yosihiro
CORPORATE SOURCE: Sch. Med., Dokkyo Univ., Tochigi, 321-02, Japan
SOURCE: Biochimica et Biophysica Acta, General Subjects (1980), 633(1), 134-43
CODEN: BBGSB3; ISSN: 0304-4165
DOCUMENT TYPE: Journal
LANGUAGE: English
GI




AB The metabolism of thyroxine (I) [51-48-9], 3,3',5-triiodothyronine (II) [6893-02-3], and 3,3',5'-triiodothyronine (III) [5817-39-0] was investigated in rat hepatoma cell cultures. When I was incubated with the cells at 37°, I glucuronide [21462-56-6] was the major product and a little increase in 125I- was detected. Although II was not observed in the incubation medium, II was clearly identified in the EtOH extract obtained from the cell homogenates after 24 h incubation. This cell line also metabolized labeled II added to culture medium. After 24 h incubation, II glucuronide [29919-72-0] was the major metabolite and iodothyronine sulfates were also formed. The sulfates contained II sulfate [ ***31135-55-4***] and 3,3'-diiodothyronine sulfate [64192-57-0] and an unknown component. In the metabolism of III, the cells were very active in carrying out glucuronidation and phenolic ring deiodination, and this metabolism yielded III glucuronide [30329-13-6] and 3,3'-diiodothyronine glucuronide [76166-54-6]. The iodide fraction contained a small amount of 3,3'-diiodothyronine sulfate. Thus, these rat hepatoma cells metabolize the thyroid hormones and their analogs by phenolic and nonphenolic ring deiodinations, by glucuronidation, and by sulfation.

CC 2-2 (Hormone ***Pharmacology***)
Section cross-reference(s): 14

IT 29919-72-0 ***31135-55-4*** 64192-57-0

RL: FORM (Formation, nonpreparative)
(formation of, from T3 by hepatoma culture)

L88 ANSWER 43 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1965:500599 HCAPLUS Full-text
DOCUMENT NUMBER: 63:100599
ORIGINAL REFERENCE NO.: 63:18577f
TITLE: Biosynthesis of ***triiodothyronine sulfate*** by beef thyroid in vitro
AUTHOR(S): Cohn, George L.
CORPORATE SOURCE: Yale Univ. School of Med.
SOURCE: Nature (London, United Kingdom) (1965), 208(5005), 80
CODEN: NATUAS; ISSN: 0028-0836
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Triiodothyronine sulfokinase (I) activity was investigated in fractionared beef thyroid tissue. I activity is highest in the thyroid microsomal-free supernatant. I activity remains constant for at least 3 months despite frequent freezing and thawing. I activity is also highest in the hepatic and adrenal microsome-free fraction. Beef thyroid microsome-free supernatant synthesizes thyroxine sulfate in the same order of magnitude as ***triiodothyronine sulfate***.
CC 58 (Hormones)
IT ***Thyroid gland***
(***triiodothyronine sulfate*** formation by, enzyme in)

L88 ANSWER 44 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1964:10995 HCAPLUS Full-text
DOCUMENT NUMBER: 60:10995
ORIGINAL REFERENCE NO.: 60:2006f-h
TITLE: 3,3',5'-Triiodothyronine and 3,3'-diiodothyronine; partially deiodinated intermediates in the metabolism of the thyroid hormones
AUTHOR(S): Flock, Eunice V.; David, Claude; Stobie, George H. C.; Owen, Charles A., Jr.
CORPORATE SOURCE: Mayo Clin., Rochester, MN
SOURCE: Endocrinology (1963), 73(4), 442-55
CODEN: ENDOAO; ISSN: 0013-7227
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB 131-Labeled 3,3',5'-triiodothyronine (I) and 3,3'-diiodothyronine (II) were given to normal and hepatectomized dogs and dogs and rats with biliary fistulas. Radioactivity was determined in bile, urine, and plasma collected from 6 to 24 hrs. following treatment. The fluids were extracted, chromatographed, radioactive spots eluted, hydrolyzed, and chromatographed. Autoradiographs of chromatograms were used to determine the identity and quantity of the metabolic products formed from I and II. In the dog, stepwise deiodination led to the formation of II and 3'-monoiodothyronine (III) from I, and of III from II. These products were found mostly in conjugated form in bile and after hepatectomy in urine. Deiodination from the β-ring occurred more slowly from I and II than from thyroxine or 3,5,3'-triiodothyronine, and was greatly diminished from all these substances after hepateetomy. In the rats a species difference was noted; deiodination from the β-ring of the above compds. was fairly rapid and large amts. of labeled iodide were excreted in the urine. Results indicated that both I and II are important intermediates of a stepwise deamination pathway in the metabolism of thyroxine in the dog, and II is an important intermediate in the metabolism of 3,5,3'-triiodothyronine.
CC 58 (Hormones)
IT ***Thyroid gland***

(hormones of, conjugated metabolites of)
IT 3130-96-9, Alanine, 3-[4-(4-hydroxy-3-iodophenoxy)-3,5-diiodophenyl]-
*10056-03-8*, Alanine, 3-[4-(4-hydroxy-3-iodophenoxy)-3,5-
diiodophenyl]-, hydrogen sulfate (ester) 21462-56-6, Glucosiduronic
acid, 4-[4-(2-amino-2-carboxyethyl)-2,6-diiodophenoxy]-2,6-diiodophenyl
29919-72-0, Glucosiduronic acid, 4-[4-(2-amino-2-carboxyethyl)-2,6-
diiodophenoxy]-2-iodophenyl 29919-72-0, Alanine, 3-4-4-(glucuronosyloxy)-
3-iodophenoxy]-3,5-diiodophenyl]- 30329-13-6, Glucosiduronic acid,
4-[4-(2-amino-2-carboxyethyl)-2-iodophenoxy]-2,6-diiodophenyl
64192-57-0, Alanine, 3-[4-(4-hydroxy-3-iodophenoxy)-3-iodophenyl]-,
hydrogen sulfate (ester) 64192-58-1, Alanine, 3-[p-(4-hydroxy-3-
iodophenoxy)phenyl]-, hydrogen sulfate (ester) 76166-54-6,
Glucosiduronic acid, 4-[4-(2-amino-2-carboxyethyl)-2-iodophenoxy]-2-
iodophenyl 77074-49-8, Thyroxine, hydrogen sulfate (ester) 77124-61-9,
Glucosiduronic acid, 4-[p-(2-amino-2-carboxyethyl)phenoxy]-2-iodophenyl
77124-61-9, Alanine, 3-[p-[4-(glucuronosyloxy)-3-iodophenoxy]-phenyl]-
79349-15-8, Alanine, 3-[4-(4-hydroxy-3,5-diiodophenoxy)-3-iodophenyl]-,
hydrogen sulfate 100405-48-9, Glucosiduronic acid, 4-[(α-carboxy-2-
iodo-p-tolyl)oxy]-2-iodophenyl 100623-57-2, Glucosiduronic acid,
4-[(α-carboxy-2,6-diiodo-p-tolyl)oxy]-2,6-diiodophenyl
106600-27-5, Glucosiduronic acid, 4-[(α-carboxy-2-iodo-p-tolyl)oxy]-
2,6-diiodophenyl 887229-51-8, Alanine, 3-[4-[4-(glucuronosyloxy)-3-
iodophenoxy]-3-iodophenyl]- 900787-54-4, Acetic acid,
[4-[4-(glucuronosyloxy)-3-iodophenoxy]-3-iodophenyl]- 900787-62-4,
Acetic acid, [4-[4-(glucuronosyloxy)-3,5-diiodophenoxy]-3-iodophenyl]-
900787-66-8, Acetic acid, [4-[4-(glucuronosyloxy)-3,5-diiodophenoxy]-3,5-
diiodophenyl]-
(as thyroid hormone metabolite)

L88 ANSWER 45 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1964:84196 HCAPLUS Full-text
DOCUMENT NUMBER: 60:84196
ORIGINAL REFERENCE NO.: 60:14790g-h
TITLE: Activity of the renal tubule in the excretion of thyroid hormones
AUTHOR(S): Baschieri, L.; Fabbrini, A.; Mazzuoli, G. F.; Cinotti, G. A.; Salabe, G. B.; Stirati, G.
CORPORATE SOURCE: Univ. Rome
SOURCE: Minerva Nucleare (1963), 7(10), 389-90
CODEN: MINUA9; ISSN: 0369-0288
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB Using the stop-flow method, dogs were injected with triiodothyronine-131I (I) or L-thyroxine-131I (II). I did not pass the glomerulus; after its administration, the urinary chromatograms showed only the inorg. 131I. The epithelium of the tubule was impermeable to II; the sulfated derivative of II was absorbed in the distal tubule.
CC 58 (Hormones)
IT ***Thyroid gland***
(hormones of, kidney excretion of)
IT *10056-03-8*, Alanine, 3-[4-(4-hydroxy-3-iodophenoxy)-3,5-
diiodophenyl]-, hydrogen sulfate (ester)
(resorption of)

L88 ANSWER 46 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1961:88453 HCAPLUS Full-text
DOCUMENT NUMBER: 55:88453
ORIGINAL REFERENCE NO.: 55:16735d-e
TITLE: Nature of the metabolites of thyroid hormones present

in the bile and the plasma of rat, after administration of radioactive iodides

AUTHOR(S): Gregorio, P. De; Lobo, L. C. G.; Michel, R.; Roche, J.

CORPORATE SOURCE: College of France, Paris

SOURCE: Bulletin de la Societe de Chimie Biologique (1960), 42, 1213-21
CODEN: BSCIA3; ISSN: 0037-9042

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB cf. CA 52, 20622c. Glucuroconjugates of thyroxine, of 3,3',5-triiodothyronine and of 3,3',5,5'-tetraiodothyroacetic acid, and sulfoconjugates of the same compds. and of 3,3',5-triiodothyroacetic acid were detected in the bile of rats receiving repeated injections of very low and fractionated doses of NaI131. All these compds. are products of the normal metabolism of thyroid hormones.

CC 11F (Biological Chemistry: Physiology)

IT ***Thyroid gland***
(hormones of, deiodases in metabolism of)

IT ***Thyroid gland***
(hormones of, metabolites of, in bile and blood plasma)

IT ***10056-03-8***, Alanine, 3-[4-(4-hydroxy-3-iodophenoxy)-3,5-diiodophenyl]-, H sulfate 95786-11-1, Acetic acid, [4-(4-hydroxy-3-iodophenoxy)-3,5-diiodophenyl]-, H sulfate 108950-89-6, Acetic acid, [4-(4-hydroxy-3,5-diiodophenoxy)-3,5-diiodophenyl]-, H sulfate 885456-76-8, Acetic acid, [4-(4-hydroxy-3-iodophenoxy)-3,5-diiodophenyl]-, glucuronate 887229-11-0, Alanine, 3-[4-(4-hydroxy-3-iodophenoxy)-3,5-diiodophenyl]-, glucuronate 896440-75-8, Acetic acid, [4-(4-hydroxy-3,5-diiodophenoxy)-3,5-diiodophenyl]-, glucuronate
(formation in bile and blood plasma, I131 effect on)

L88 ANSWER 47 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1961:44511 HCAPLUS Full-text

DOCUMENT NUMBER: 55:44511

ORIGINAL REFERENCE NO.: 55:8638h-i

TITLE: Further study of the degradation of 3,3',5-triiodo-L-thyronine sulfuric ester by rat feces

AUTHOR(S): Closon, Jacques; Betz-Bareau, M.

CORPORATE SOURCE: Univ. Liege, Belg.

SOURCE: Comptes Rendus des Seances de la Societe de Biologie et de Ses Filiales (1960), 154, 1109-12
CODEN: CRSBAW; ISSN: 0037-9026

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB cf. CA 55, 2787g. Hydrolysis of the ester at neutral pH and 37° by a suspension of rat feces was not due to Escherichia coli, but partly to other unidentified bacteria and partly to an exosulfatase of uncertain bacterial origin. The subsequent deamination, after hydrolysis of the ester, was by E. coli and not by an exoenzyme in the medium.

CC 11H (Biological Chemistry: ***Pharmacology***)

IT ***31135-55-4***, Alanine, 3-[4-(4-hydroxy-3-iodophenoxy)-3,5-diiodophenyl]-, sulfate (ester) ***31135-55-4***, Sulfuric acid, ester with 3-[4-(4-hydroxy-3-iodophenoxy)-3,5-diiodophenyl]alanine
(hydrolysis by feces)

L88 ANSWER 48 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1960:82202 HCAPLUS Full-text

DOCUMENT NUMBER: 54:82202

ORIGINAL REFERENCE NO.: 54:15705c-e

TITLE: Metabolism in the rat of the sulfuric ester of 3,3',5-triiodothyronine

AUTHOR(S): Roche, Jean; Michel, Raymond; Closon, Jacques; Michel, Odette
CORPORATE SOURCE: College of France, Paris
SOURCE: Biochimica et Biophysica Acta (1960), 38, 325-32
CODEN: BBACAQ; ISSN: 0006-3002
DOCUMENT TYPE: Journal
LANGUAGE: French
AB cf. CA 53, 19087h. The metabolism of 3,3',5-triiodothyronine (I) and its sulfuric ester (II) was studied in the thyroidectomized rat. I was degraded much faster than II, which the cells concentrated to a much lesser degree. The characteristics of the metabolism of II, including its formation at the expense of the glucuronoconjugate of I in the liver and the excretion of I after its injection, its presence in plasma, and its absence from the urine, suggested that it could be hydrolyzed in the tissues by an arylsulfatase and its hormonal component deiodinated. It is suggested that the probable role of II is to serve as a reserve of I accessible to the cells after hydrolysis of the ester bond.
CC 11H (Biological Chemistry: ***Pharmacology***)
IT ***31135-55-4***, Alanine, 3-[4-(4-hydroxy-3-iodophenoxy)-3,5-diiodophenyl]-, sulfate (ester) ***31135-55-4***, Sulfuric acid, ester with 3-[4-(4-hydroxy-3-iodophenoxy)-3,5-diiodophenyl]alanine
(metabolism of)

L88 ANSWER 49 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1959:57904 HCAPLUS Full-text
DOCUMENT NUMBER: 53:57904
ORIGINAL REFERENCE NO.: 53:10517b-c
TITLE: Biliary excretion of the sulfoconjugate of 3,3',5-triiodothyronine after injection of thyroxine
AUTHOR(S): Roche, Jean; Michel, Raymond; Gruson, Marcelle
CORPORATE SOURCE: College of France, Paris
SOURCE: Comptes Rendus des Seances de la Societe de Biologie et de Ses Filiales (1958), 152, 1324-8
CODEN: CRSBAW; ISSN: 0037-9026
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB Bile of thyroidectomized rats contained small amts. of sulfoconjugated 3,3',5-triiodo-L-thyronine after i.m. injection of DL-thyroxine.
CC 11H (Biological Chemistry: ***Pharmacology***)
IT Bile
(3,3',5-***triiodothyronine sulfate*** in)
IT ***31135-55-4***, Alanine, 3-[4-(4-hydroxy-3-iodophenoxy)-3,5-diiodophenyl]-, sulfate (ester) ***31135-55-4***, Sulfuric acid, ester with 3-[4-(4-hydroxy-3-iodophenoxy)-3,5-diiodophenyl] alanine
(in bile after thyroxine administration)

L88 ANSWER 50 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1958:88973 HCAPLUS Full-text
DOCUMENT NUMBER: 52:88973
ORIGINAL REFERENCE NO.: 52:15693h-i
TITLE: A sulfate ester of 3,5,3'-triiodo-L-thyronine in human plasma and bile
AUTHOR(S): Fauvert, R.; Roche, J.; Michel, R.; Thieblemont, P.; Gruson, M.
CORPORATE SOURCE: Coll. France, Paris
SOURCE: Rev. franc. etudes clin. et biol. (1958), 3, 372-4
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB A sulfate ester of 3,5,3'-triiodo-L-thyronine was found in plasma and bile following the injection of labelled 3,5,3'-triiodo-L-thyronine in ***hypothyroid*** patients.
CC 11F (Biological Chemistry: Physiology)
IT ***31135-55-4***, Alanine, 3-[4-(4-hydroxy-3-iodophenoxy)-3,5-diiodophenyl]-, sulfate (ester)
(in bile and blood plasma)

L88 ANSWER 51 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1958:116115 HCAPLUS Full-text
DOCUMENT NUMBER: 52:116115
ORIGINAL REFERENCE NO.: 52:20622d-e
TITLE: Biliary, urinary, and fecal elimination and tissue distribution of 3,3',5-triiodothyronine and its sulfuric ester in the rat
AUTHOR(S): Roche, Jean; Michel, Raymond; Closon, Jacques; Michel, Odette
CORPORATE SOURCE: Coll. France, Paris
SOURCE: Comptes Rendus des Seances de la Societe de Biologie et de Ses Filiales (1958), 152, 33-8
CODEN: CRSBAW; ISSN: 0037-9026
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB I131-labeled I and II were injected intravenously into thyroidectomized rats. Diffusion into the tissues was slower for II than for I. Both were partly dehalogenated in the body. Over half of the radioactivity was excreted in 4 hrs. in the urine (.apprx.41%) and feces (.apprx.13%). That in the urine was mostly inorg. iodide. No II was excreted unchanged in the urine. Some I and II passed into the bile.
CC 11H (Biological Chemistry: ***Pharmacology***)
IT ***Thyroidectomized state***
***Thyroidectomized state***
(3,3',5-triiodothyronine and its sulfuric esters in bile, feces, tissue and urine in)
IT 3130-96-9, Alanine, 3-[4-(4-hydroxy-3-iodophenoxy)-3,5-diiodophenyl]-
***31135-55-4***, Alanine, 3-[4-(4-hydroxy-3-iodophenoxy)-3,5-diiodophenyl]-, sulfate (ester)
(in bile, feces, tissue and urine after thyroidectomy)

L88 ANSWER 52 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1958:116114 HCAPLUS Full-text
DOCUMENT NUMBER: 52:116114
ORIGINAL REFERENCE NO.: 52:20622c-d
TITLE: Presence of the sulfuric ester of 3,3',5-triiodo-L-thyronine in the plasma of the rat after administration of the hormone
AUTHOR(S): Roche, Jean; Michel, Raymond; Closon, Jacques; Michel, Odette
CORPORATE SOURCE: Coll. France, Paris
SOURCE: Comptes Rendus des Seances de la Societe de Biologie et de Ses Filiales (1958), 152, 6-10
CODEN: CRSBAW; ISSN: 0037-9026
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB Within a few hrs. after intramuscular injection of 3,3',5-triiodothyronine (I) into thyroidectomized rats its sulfoconjugate (II) was found present in small amts. in the circulating blood. II should be regarded as a normal plasma constituent. The isolation and identification of II are described.
CC 11H (Biological Chemistry: ***Pharmacology***)
IT ***31135-55-4***, Alanine, 3-[4-(4-hydroxy-3-iodophenoxy)-3,5-

diiodophenyl]-, sulfate (ester)
(in blood plasma after administration)

L88 ANSWER 53 OF 63 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1958:26607 HCAPLUS Full-text
DOCUMENT NUMBER: 52:26607
ORIGINAL REFERENCE NO.: 52:4833e-f
TITLE: Biliary excretion of a sulfoconjugate of 3,5,3'-triiodo-L-thyronine after administration of that hormone to a rat
AUTHOR(S): Roche, Jean; Michel, Raymond; Michel, Odette; Etling, Nicole
SOURCE: Compt. rend. (1957), 245, 1089-91
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB Male thyroidectomized rats were given s.c. 3,5,3'-triodo-L-thyronine (I) labeled with I131 in the 3' position and with or without S35-labeled Na2SO4. The bile collected after injection was fractionated by means of chromatog. The two principal marked compds. determined after I administration were I and the sulfuric ester of I. This compound (II) was also identified in the blood. Chromatog. studies also revealed the radioactive constituents: SO4--; glycuroconjugate of I; triiodothyropyruvic acid; II; and an unknown metabolite.
CC 11H (Biological Chemistry: ***Pharmacology***)
IT 6893-02-3, Alanine, 3-[4-(4-hydroxy-3-iodophenoxy)-3,5-diiodophenyl]-, glucuronoside ***31135-55-4***, Alanine, 3-[4-(4-hydroxy-3-iodophenoxy)-3,5-diiodophenyl]-, sulfate (ester)
(biliary excretion after administration)

L88 ANSWER 54 OF 63 MEDLINE on STN DUPLICATE 4
ACCESSION NUMBER: 96434364 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 8837331
TITLE: Demonstration of thyromimetic effects of 3,5,3'-***triiodothyronine sulfate*** (T3S) in euthyroid rats.
AUTHOR: Chopra I J; Nguyen D
CORPORATE SOURCE: Department of Medicine, UCLA School of Medicine 90024, USA.
SOURCE: Thyroid : official journal of the American Thyroid Association, (1996 Jun) Vol. 6, No. 3, pp. 229-32.
Journal code: 9104317. ISSN: 1050-7256.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199612
ENTRY DATE: Entered STN: 28 Jan 1997
Last Updated on STN: 28 Jan 1997
Entered Medline: 12 Dec 1996
ABSTRACT:
We have previously demonstrated that T3 sulfate (T3S) exhibits thyromimetic effects in ***hypothyroid*** rats and that, on a molar basis, its activity approximates 20% that of T3. Since T3S is avidly deiodinated by 5'-deiodinase, type I (5'-DI) and 5'-DI activity is markedly reduced in ***hypothyroidism*** , it seemed possible that T3S is active only in ***hypothyroidism*** and not in the euthyroid state wherein normal tissue 5'-DI activity will rapidly degrade T3S and little T3S will be left for metabolism (desulfation) to biologically active T3. This study was undertaken to test this possibility.

We studied the effect of T3S (4.6, 14, or 42 nmol/day for 7 days, ip) and T3 (1.0, 3.0 or 9.0 nmol/day for 7 days, ip) in groups of male Sprague-Dawley rats (5-6/group); the control group was treated with saline ip. Treatment with both T3 and T3S caused a significant ($p < 0.05$) increase in hepatic and renal 5'-DI. Similarly, both treatments caused a significant reduction in serum total T4 and TSH levels. In these effects, T3S was approximately one-fifth as potent as T3 on a molar basis. Interestingly, changes in body weight during treatment with T3 and T3S suggested that at doses that caused a comparable tissue or pituitary effect, T3S treatment permitted a significantly greater weight gain than treatment with T3. We conclude that T3S exhibits thyromimetic effects in euthyroid rats in a manner comparable to that in ***hypothyroid*** rats. The biological effects of T3S may be due to T3 generated in tissues by desulfation of T3S.

CONTROLLED TERM: Check Tags: Male
Animals
*Iodide Peroxidase: ME, metabolism
Kidney: DE, drug effects
Kidney: EN, enzymology
Liver: DE, drug effects
Liver: EN, enzymology
Rats
Rats, Sprague-Dawley
Research Support, Non-U.S. Gov't
Thyrotropin: BL, blood
Thyroxine: BL, blood
*Triiodothyronine: AA, analogs & derivatives
***Triiodothyronine: PD, pharmacology***

CAS REGISTRY NO.: ***31135-55-4 (triiodothyronine sulfate)***; 6893-02-3 (Triiodothyronine); 7488-70-2 (Thyroxine); 9002-71-5 (Thyrotropin)

CHEMICAL NAME: EC 1.11.1.8 (Iodide Peroxidase)

L88 ANSWER 55 OF 63 MEDLINE on STN DUPLICATE 8

ACCESSION NUMBER: 93273855 MEDLINE Full-text

DOCUMENT NUMBER: PubMed ID: 8501166

TITLE: A study of the serum 3,5,3'-***triiodothyronine sulfate*** concentration in normal and ***hypothyroid*** fetuses at various gestational stages.

AUTHOR: Santini F; Cortelazzi D; Baggiani A M; Marconi A M; Beck-Peccoz P; Chopra I J

CORPORATE SOURCE: Department of Medicine, University of California, Los Angeles 90024.

CONTRACT NUMBER: DK-16155 (NIDDK)
NSS2-S07-RR-05354 (NCRR)

SOURCE: The Journal of clinical endocrinology and metabolism, (1993 Jun) Vol. 76, No. 6, pp. 1583-7.
Journal code: 0375362. ISSN: 0021-972X.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals

ENTRY MONTH: 199307

ENTRY DATE: Entered STN: 16 Jul 1993
Last Updated on STN: 29 Jan 1996
Entered Medline: 1 Jul 1993

ABSTRACT:
We have studied T3 sulfate (T3S) levels, blindly, in coded plasma samples from 21 normal and 3 ***hypothyroid*** fetuses at different stages of gestation (19-42 weeks). Fetal plasma samples were obtained by cordocentesis. T3S was detectable in all samples studied, with values ranging from 50-294 (mean +/-

SD, 130 +/- 62 pmol/L). Plasma T3S was low (< 45 pmol/L) in all 4 normal adult control subjects studied simultaneously; serum T3S ranged from less than 20 to 130 in another set of 18 control subjects (mean +/- SD, 63 +/- 32 pmol/L). Fetal T3S values were positively correlated with gestational age (r = 0.43; P < 0.05), but not with free T4 (FT4), FT3, or TSH values. In the 3 ***hypothyroid*** fetuses at 31, 38, and 40 weeks gestation, respectively, plasma TSH was elevated (26, 98, and 24 mU/L, respectively), FT4 was low (10, 6.7, and 7.5 pmol/L, respectively), and FT3 was normal or high (3.2, 8.2, and 2.2 pmol/L, respectively). However, T3S values in ***hypothyroid*** fetuses (88, 133, and 252 pmol/L, respectively) were similar to those in normal fetuses at corresponding gestational ages. We conclude that 1) T3S is detectable in fetal circulation from at least 19 weeks gestation, and its concentration increases with fetal-age; 2) plasma T3S concentrations in the fetus at 19-40 weeks gestation are at least comparable to but generally higher than those in the adult; and 3) plasma T3S levels in ***hypothyroid*** fetuses are similar to those in normal fetuses. Recent studies demonstrating the ability of some fetal rat tissues (e.g. cerebral cortex) to desulfate T3S to T3 have suggested a possible role of T3S as a source of T3. Normal T3S in fetal ***hypothyroidism*** suggests that T3S may contribute to attenuation of the effects of ***hypothyroidism*** during intrauterine life.

CONTROLLED TERM: Check Tags: Female; Male
Embryonic and Fetal Development
*Fetal Diseases: BL, blood
Gestational Age
Humans
***Hypothyroidism: BL, blood***
Osmolar Concentration
Reference Values
Research Support, Non-U.S. Gov't
Research Support, U.S. Gov't, P.H.S.
Thyrotropin: BL, blood
Thyroxine: BL, blood
*Triiodothyronine: AA, analogs & derivatives
Triiodothyronine: BL, blood

CAS REGISTRY NO.: ***31135-55-4 (triiodothyronine sulfate)***; 6893-02-3 (Triiodothyronine); 7488-70-2 (Thyroxine); 9002-71-5 (Thyrotropin)

L88 ANSWER 56 OF 63 MEDLINE on STN DUPLICATE 11

ACCESSION NUMBER: 92317293 MEDLINE Full-text

DOCUMENT NUMBER: PubMed ID: 1619009

TITLE: A radioimmunoassay for measurement of 3,5,3'-***triiodothyronine sulfate***: studies in ***thyroidal*** and nonthyroidal ***diseases***, pregnancy, and neonatal life.

AUTHOR: Chopra I J; Wu S Y; Teco G N; Santini F

CORPORATE SOURCE: Department of Medicine, University of California-Los Angeles Center for Health Sciences 90024-1682.

CONTRACT NUMBER: DK-16155 (NIDDK)

SOURCE: The Journal of clinical endocrinology and metabolism, (1992 Jul) Vol. 75, No. 1, pp. 189-94.
Journal code: 0375362. ISSN: 0021-972X.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals

ENTRY MONTH: 199207

ENTRY DATE: Entered STN: 15 Aug 1992
Last Updated on STN: 15 Aug 1992
Entered Medline: 31 Jul 1992

ABSTRACT:
A highly sensitive, specific, and reproducible RIA has been developed to measure T3 sulfate (T3S). Only T4 sulfate cross-reacted significantly (approximately 3%) in the RIA; rT3 sulfate, T4, T3, rT3, and diiodothyronine cross-reacted less than 0.01%. T3S was bound by thyronine-binding globulin and albumin in serum. The free fraction of T3S in four normal sera averaged 0.25% compared to a value of 0.35% for T3. Therefore, T3S was measured in ethanol extracts of serum. Recovery of the nonradioactive T3S added to serum averaged 92%. The dose-response curves of inhibition of binding of [125I]T3S to anti-T3S antibody by serial dilutions of serum extracts were essentially parallel to the standard curve. The detection threshold of the RIA was 20 pmol/L (1.5 ng/dL). The coefficient of variation averaged 7.8% within an assay and 11% between assays. The serum concentration of T3S was (mean +/- SE) 76 +/- 7.2 pmol/L in normal subjects, 268 +/- 29 in hyperthyroid patients with Graves' disease, 92 +/- 28 in ***hypothyroid*** patients, 201 +/- 32 in patients with systemic nonthyroidal illnesses, 40 +/- 6.2 in pregnant women (15-31 weeks gestation), and 429 +/- 39 in cord sera of newborns; the values in hyperthyroidism, nonthyroidal illnesses, and newborns were significantly different from normal (P less than 0.01). The mean concentration of T3S in amniotic fluid samples at 15-31 weeks gestation (90 +/- 1.3 pmol/L) was significantly higher than the corresponding value in maternal serum (P less than 0.05) and significantly lower than the corresponding value in newborn cord blood serum (P less than 0.001). Oral administration of sodium ipodate (Oragrafin; 3 g) to two hyperthyroid patients was associated with a 76-190% increase in serum T3S at 8 h, followed by a gradual decrease to a nadir that was 25-60% of the baseline value 2-3 days after ipodate ingestion. We conclude that 1) T3S is a normal component of human serum, and its levels change substantially in several physiological and pathological conditions; 2) sulfation pathway plays an important role in the metabolism of iodothyronines in man; and 3) high serum T3S levels in newborns and low normal levels in pregnancy despite elevated thyronine-binding globulin levels may signify markedly different metabolism of T3S in the mother and fetus.

CONTROLLED TERM: Check Tags: Female
Adolescent
Adult
Aged
Amniotic Fluid: CH, chemistry
Carrier Proteins: BL, blood
Dose-Response Relationship, Drug
Fetal Blood: CH, chemistry
Graves Disease: BL, blood
Humans
Infant, Newborn
Membrane Proteins: BL, blood
Middle Aged
Pregnancy: BL, blood
*Radioimmunoassay: MT, methods
Reference Standards
Reproducibility of Results
Research Support, U.S. Gov't, Non-P.H.S.
Research Support, U.S. Gov't, P.H.S.
*Thyroid Hormones
*Triiodothyronine: AA, analogs & derivatives
Triiodothyronine: AN, analysis
Triiodothyronine: BL, blood

CAS REGISTRY NO.: ***31135-55-4 (triiodothyronine sulfate)***; 6893-02-3 (Triiodothyronine)

CHEMICAL NAME: 0 (Carrier Proteins); 0 (Membrane Proteins); 0 (Thyroid Hormones); 0 (thyroid hormone-binding proteins)

L88 ANSWER 57 OF 63 MEDLINE on STN
ACCESSION NUMBER: 2000035056 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 10567020
TITLE: Fetal-to-maternal transfer of 3,3',5-***triiodothyronine sulfate*** and its metabolite in sheep.
AUTHOR: Wu S Y; Polk D H; Huang W S; Fisher D A
CORPORATE SOURCE: Nuclear Medicine Services, Department of Veterans Affairs Medical Center, Long Beach, California 90822, USA.. sywu@pop.long-beach.va.gov
CONTRACT NUMBER: HD-04270 (NICHD)
R15-GM-41949 (NIGMS)
SOURCE: The American journal of physiology, (1999 Nov) Vol. 277, No. 5 Pt 1, pp. E915-9.
Journal code: 0370511. ISSN: 0002-9513.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199912
ENTRY DATE: Entered STN: 13 Jan 2000
Last Updated on STN: 13 Jan 2000
Entered Medline: 14 Dec 1999
ABSTRACT:
Earlier studies have shown that sulfoconjugation is a major pathway of thyroid hormone metabolism in fetal mammals. To assess the placental transfer of sulfoconjugates in the pregnant sheep model, we measured 3,3',5-triiodothyronine (T(3)) sulfate (T(3)S), 3, 3'-diiodothyronine sulfate (T(2)S), and T(3) concentrations in fetal serum and in maternal serum and urine after T(3)S infusion to the fetus (n = 5) or the ewe (n = 6). Maternal infusion of T(3)S did not increase fetal serum T(2)S, T(3)S, or T(3) concentrations. In contrast, fetal infusion of T(3)S produced significant increases in maternal serum T(2)S and T(3)S but not T(3) concentrations. Fetal T(3)S infusion also increased maternal urine excretion of T(3)S. However, the 4-h cumulative maternal urinary excretion of T(2)S and T(3)S after fetal T(3)S infusion was less than the excretion observed after fetal infusion of equimolar amounts of T(3) in our previous study. It is concluded that fetal serum T(2)S and T(3)S can be transferred to maternal compartments. However, compared with T(3), these sulfoconjugates may be less readily transferred.
CONTROLLED TERM: Check Tags: Female
Animals
Diiodothyronines: BL, blood
***Diiodothyronines: PK, pharmacokinetics***
Diiodothyronines: UR, urine
Fetus: ME, metabolism
*Maternal-Fetal Exchange: PH, physiology
Pregnancy
Research Support, Non-U.S. Gov't
Research Support, U.S. Gov't, Non-P.H.S.
Research Support, U.S. Gov't, P.H.S.
Sheep
***Thyroid Gland: PH, physiology***
*Triiodothyronine: AA, analogs & derivatives
Triiodothyronine: BL, blood
***Triiodothyronine: PK, pharmacokinetics***
Triiodothyronine: UR, urine
CAS REGISTRY NO.: ***31135-55-4 (triiodothyronine sulfate)***; 64192-57-0 (3,3'-diiodothyronine-4-sulfate); 6893-02-3 (Triiodothyronine)
CHEMICAL NAME: 0 (Diiodothyronines)

L88 ANSWER 58 OF 63 MEDLINE on STN
ACCESSION NUMBER: 97374603 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 9231052
TITLE: Triiodothyronine (T3) reflects renal graft function after renal transplantation.
AUTHOR: Reinhardt W; Misch C; Jockenhovel F; Wu S Y; Chopra I; Philipp T; Reinwein D; Eigler F W; Mann K
CORPORATE SOURCE: Division of Endocrinology, Medical Clinic, Essen, Germany.
SOURCE: Clinical endocrinology, (1997 May) Vol. 46, No. 5, pp. 563-9.
Journal code: 0346653. ISSN: 0300-0664.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199708
ENTRY DATE: Entered STN: 25 Aug 1997
Last Updated on STN: 25 Aug 1997
Entered Medline: 11 Aug 1997

ABSTRACT:
OBJECTIVE: Abnormalities in ***thyroid*** function are observed in patients with end stage renal ***disease***. However, there are no data available evaluating sequential changes of ***thyroid*** function after renal transplantation. Therefore, we have studied ***thyroid*** hormone function in the immediate post-operative period after renal transplantation in order to determine the relationship between improving renal function and changes in ***thyroid*** hormone economy. DESIGN AND PATIENTS: ***Thyroid*** function was evaluated in 22 patients before and on days 1, 3, 7 and 15 after renal transplantation. All patients received prednisone and cyclosporin as immunosuppressive therapy. Twelve patients with normal renal function undergoing comparable surgical procedures served as a control group. MEASUREMENTS: Serum creatinine and ***thyroid*** hormone parameters (total T4, total T3, free T4, free T3, thyroxin binding globulin (TBG), reverse T3, T3 sulphate and TSH) were measured. RESULTS: According to post-operative kidney function after renal transplantation, patients could be subdivided into three groups: five patients had primary graft function (group I); seven patients had delayed graft function because of acute renal failure (group II); 10 patients had delayed graft function requiring high doses of prednisone and some also of OKT3 because of acute rejection (group III). There was a significant fall in T3 and T4 concentrations with a concomitant rise in reverse T3 in all patients up to 3 days after renal transplantation. However, only patients in group I reached pre-operative values on day 15 after renal transplantation (serum creatinine 167 +/- 52 microM), whereas patients in group II (creatinine 609 +/- 118 microM) and group III (creatinine 839 +/- 71 microM) continued to have T3 concentrations well in the ***hypothyroid*** range (group I, 1.68 +/- 0.28 nM) vs 0.87 +/- 0.09 nM in group II and 0.76 +/- 0.10 nM in group III; $P < 0.01$). Serum T4 concentrations were also low in group III (47.7 nM vs 100.2 nM in group I; $P < 0.05$) 15 days after renal transplantation. These changes were accompanied by a concomitant fall in T3/TBG ratio and in free T3. Elevated reverse T3 returned to normal values in all groups on the 15th day after renal transplantation. TSH fell significantly on the first post-operative day, but did not return to pre-operative values in renal transplantation patients. In the control group, TSH did not change during the study period. T3 sulphate, known to be elevated in chronic renal failure, remained above normal in all patients irrespective of graft function during this study period. CONCLUSIONS: T3 concentrations reflect renal graft function after renal transplantation. T3 is below normal in patients with delayed graft function (acute renal failure or acute rejection). The post-operative period (up to 3 days after renal transplantation) is associated with a low T3 syndrome. TSH does not return to

pre-operative values even in patients with primary graft function. This might be due to the administration of prednisone. T3-sulphate is elevated before and after renal transplantation irrespective of graft function.

CONTROLLED TERM: Check Tags: Female; Male
Adult
Biological Markers: BL, blood
***Cyclosporine: TU, therapeutic use***
Graft Rejection: BL, blood
*Graft Rejection: DI, diagnosis
Graft Rejection: PP, physiopathology
Humans
Immunosuppressive Agents
Kidney: PP, physiopathology
Kidney Failure, Acute: BL, blood
*Kidney Failure, Acute: DI, diagnosis
Kidney Failure, Acute: PP, physiopathology
*Kidney Transplantation
Middle Aged
Postoperative Period
***Prednisolone: TU, therapeutic use***
***Thyroid Gland: PP, physiopathology***
Thyrotropin: BL, blood
Thyroxine: BL, blood
Thyroxine-Binding Proteins: AN, analysis
Triiodothyronine: AA, analogs & derivatives
*Triiodothyronine: BL, blood
Triiodothyronine, Reverse: BL, blood

CAS REGISTRY NO.: ***31135-55-4 (triiodothyronine sulfate)***; 50-24-8 (Prednisolone); 5817-39-0 (Triiodothyronine, Reverse); 59865-13-3 (Cyclosporine); 6893-02-3 (Triiodothyronine); 7488-70-2 (Thyroxine); 9002-71-5 (Thyrotropin)

CHEMICAL NAME: 0 (Biological Markers); 0 (Immunosuppressive Agents); 0 (Thyroxine-Binding Proteins)

L88 ANSWER 59 OF 63 MEDLINE on STN

ACCESSION NUMBER: 96314737 MEDLINE Full-text

DOCUMENT NUMBER: PubMed ID: 8733878

TITLE: Increased urinary excretion of sulfated 3,3',5-triiodothyronine in patients with nodular goiters receiving suppressive thyroxine therapy.

AUTHOR: Huang W S; Kuo S W; Chen W L; Fuh M M; Wu S Y

CORPORATE SOURCE: Department of Nuclear Medicine, Tri-Service General Hospital, Taipei, Taiwan, R.O.C.

CONTRACT NUMBER: HD 04270 (NICHD)
R15-GM 41949 (NIGMS)

SOURCE: Thyroid : official journal of the American Thyroid Association, (1996 Apr) Vol. 6, No. 2, pp. 91-6.
Journal code: 9104317. ISSN: 1050-7256.

PUB. COUNTRY: United States

DOCUMENT TYPE: (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199610

ENTRY DATE: Entered STN: 6 Nov 1996
Last Updated on STN: 6 Nov 1996
Entered Medline: 24 Oct 1996

ABSTRACT:
Increased serum 3,3',5-***triiodothyronine sulfate*** (T3S) levels have been detected in various pathophysiologic states. However, little

is known about T3S concentrations in other biological fluids. By employing a highly sensitive, specific, and reproducible radioimmunoassay (RIA), we measured T3S in the serum and urine of 20 premenopausal women with benign nodular goiters before and after administration of thyroxine for 6 months (T4; 3.2 micrograms/kg/day). Serum T3 concentrations did not change significantly after treatment (2.0 vs. 1.7 nmol/L; $p > 0.05$). However, the mean serum T4 and free T4 concentrations were significantly higher after treatment (138 vs. 88 nmol/L and 28 vs. 17 pmol/L; $p < 0.01$, respectively). Serum thyroid stimulating hormone (TSH) levels were significantly reduced after T4 treatment (0.13 vs. 0.66 mU/L, $p < 0.01$) and the serum levels of T3S were significantly increased after treatment (82 vs. 45 pmol/L; $p < 0.01$). A good correlation was observed between increased serum T3S and T4 concentrations ($r = 0.66$; $p < 0.001$). The sulfoconjugate of T3 was significantly increased in creatinine-corrected urine after treatment (606 vs. 253 pmol/umol Cr.; $p < 0.01$). There was a significant correlation between increased creatinine-corrected urine T3S and increased serum free T4 ($r = 0.65$; $p < 0.001$). In summary, significant increases in serum and urine T3S levels were noted in T4-treated patients with subnormal serum TSH and borderline elevated T4. We thus conclude that the sulfation pathway may play a role in the homeostasis of thyroid hormone metabolism in T4-treated subjects with relative hyperthyroxinemia. In addition, the creatinine-corrected urine concentrations of T3S may serve as an index for the evaluation of T4-treated patients with elevated levels of T4.

CONTROLLED TERM: Check Tags: Female
Adult
Creatinine: UR, urine
Goiter, Nodular: DT, drug therapy
*Goiter, Nodular: UR, urine
Humans
Iodine Radioisotopes: DU, diagnostic use
Middle Aged
Radioimmunoassay
Research Support, Non-U.S. Gov't
Research Support, U.S. Gov't, Non-P.H.S.
Research Support, U.S. Gov't, P.H.S.
Thyrotropin: BL, blood
*Thyroxine: AE, adverse effects
Thyroxine: BL, blood
***Thyroxine: TU, therapeutic use***
*Triiodothyronine, Reverse: UR, urine

CAS REGISTRY NO.: 5817-39-0 (Triiodothyronine, Reverse); 60-27-5 (Creatinine); 7488-70-2 (Thyroxine); 9002-71-5 (Thyrotropin)

CHEMICAL NAME: 0 (Iodine Radioisotopes)

L88 ANSWER 60 OF 63 MEDLINE on STN

ACCESSION NUMBER: 91365818 MEDLINE Full-text

DOCUMENT NUMBER: PubMed ID: 1890147

TITLE: Characteristics of 3,5,3'-***triiodothyronine sulfate*** metabolism in euthyroid man.

AUTHOR: LoPresti J S; Mizuno L; Nimalysuria A; Anderson K P; Spencer C A; Nicoloff J T

CORPORATE SOURCE: University of Southern California, School of Medicine, Department of Medicine, Los Angeles 90033.

CONTRACT NUMBER: DK-11727 (NIDDK)
M01-RR-43 (NCRR)

SOURCE: The Journal of clinical endocrinology and metabolism, (1991 Oct) Vol. 73, No. 4, pp. 703-9.
Journal code: 0375362. ISSN: 0021-972X.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 199110
ENTRY DATE: Entered STN: 3 Nov 1991
Last Updated on STN: 3 Nov 1991
Entered Medline: 17 Oct 1991

ABSTRACT:
The sulfated conjugate of T3 (T3S) has long been recognized as a normal product of peripheral thyroid hormone metabolism. In order to better understand the role that T3S may play in this process, the metabolic handling of T3S was studied in euthyroid man. After the iv administration of [125I]T3S in man, T3S was found to be rapidly metabolized with estimated mean MCR of 135 +/- 15 liters/day (L/D) after a bolus injection and 127 +/- 8 L/D employing a constant infusion. The primary route of T3S disposal was by deiodination with an efficiency of 92%. The administration of propylthiouracil (PTU, 300 mg every 6 h x 5 days) and iopanoic acid (IA, 500 mg every day x 5 days), both inhibitors of deiodination, decreased clearance compared to control (87 +/- 9 L/D, P less than 0.01 and 46 +/- 10 L/D, P less than 0.002, respectively). A 3-day fast also reduced the clearance of T3S (56 +/- 10 L/D, P less than 0.002). All three maneuvers decreased the total urinary deiodination fraction of tracer T3S (control 91 +/- 2%, PTU 70 +/- 9%, P less than 0.04, IA 26 +/- 3%, P less than 0.0001, and fasting 58 +/- 6%, P less than 0.01). A strong correlation between T3S clearance and deiodination was noted for fasting and IA only (r = 0.78, P less than 0.003). However, no relationship between clearance and deiodination was noted with PTU administration presumably as a result of a compensatory increase in biliary losses of T3S. The urinary thyronine excretion pattern demonstrated the presence of small amounts of labeled T3,3,3'-T2, and 3,3'-T2S with the major metabolite being T3S itself. TSH levels were not influenced by the infusion of stable T3S designed to achieve a serum value greater than 50 ng/dL. No absorption of intact T3S was detected after its oral ingestion. In conclusion, T3S is rapidly cleared from the serum, primarily by deiodination, may undergo nondeiodinative disposal when hepatic deiodination is inhibited by PTU but not with IA or fasting, and has no intrinsic biological activity. Thus, T3S may serve as a metabolite of T3 for its rapid deiodinative disposal. Although the precise role T3S plays in human thyroid hormone metabolism has not been defined, the metabolic characteristics of T3S appear similar to that of an unidentified alternate T4 metabolite formed in low T3 states of fasting and nonthyroidal illness.

CONTROLLED TERM: Check Tags: Male
Administration, Oral
Adult
Fasting: ME, metabolism
Humans
Injections, Intravenous
Iodine Radioisotopes: DU, diagnostic use
Iodine Radioisotopes: ME, metabolism
***Iodine Radioisotopes: PK, pharmacokinetics***
Middle Aged
Research Support, U.S. Gov't, P.H.S.
***Thyroid Gland: ME, metabolism***
Triiodothyronine: AD, administration & dosage
*Triiodothyronine: AA, analogs & derivatives
Triiodothyronine: ME, metabolism
***Triiodothyronine: PK, pharmacokinetics***

CAS REGISTRY NO.: ***31135-55-4 (triiodothyronine sulfate)***; 6893-02-3 (Triiodothyronine)

CHEMICAL NAME: 0 (Iodine Radioisotopes)

L88 ANSWER 61 OF 63 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights

reserved on STN

ACCESSION NUMBER: 93226368 EMBASE Full-text
DOCUMENT NUMBER: 1993226368
TITLE: Sulfate conjugates of iodothyronines in developing sheep: Effect of fetal ***hypothyroidism***.
AUTHOR: Wu S.-Y.; Polk D.H.; Huang W.-S.; Reviczky A.; Wang K.; Fisher D.A.
CORPORATE SOURCE: Nuclear Medicine/Medical Services, VA Medical Center,Long Beach, CA 90822, United States
SOURCE: American Journal of Physiology - Endocrinology and Metabolism, (1993) Vol. 265, No. 1 28-1, pp. E115-E120. . ISSN: 0002-9513 CODEN: AJPMD
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 002 Physiology
003 Endocrinology
021 Developmental Biology and Teratology
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 12 Sep 1993
Last Updated on STN: 12 Sep 1993
ABSTRACT: We recently showed that thyroxine sulfate (T4S) and 3,3',5-***triiodothyronine*** ***sulfate*** (T3S) were major thyroid hormone metabolites in ovine fetuses and neonates. To further characterize the sulfation pathway in ovine fetuses, we measured 3,3',5'-triiodothyronine (rT3S) in serum and other body fluids in samples obtained from fetal (n = 23, 94-145 days of gestational age, term = 150 days), newborn (n = 6), and adult (n = 6) sheep. In addition, T3S, T4S, and rT3S levels were measured in tissue fluids and serum samples obtained from ovine fetuses 13 days after total ***thyroidectomy*** (Tx) conducted at gestational age of 110-113 days (n = 5). Sham-operated twin fetuses served as controls (n = 5). The relative order of mean rT3S concentration for various tissue fluids in fetuses were meconium > bile > serum > allantoic fluid > urine or amniotic fluid. Peak mean tissue fluid levels generally occurred at 110-130 days gestation. In ***hypothyroid*** fetuses, significant decreases in the mean serum concentrations of T4S and rT3S, but not T3S, were noted. The mean rT3S level also was decreased significantly in allantoic fluid, bile, and meconium, whereas T4S and T3S levels were reduced only in bile of the Tx fetuses. These data demonstrate that sulfation is a major pathway in thyroid hormone metabolism in both euthyroid and ***hypothyroid*** ovine fetuses.

CONTROLLED TERM: Medical Descriptors:
***hypothyroidism***
*sulfation
*thyroid hormone metabolism
adolescent
age
animal experiment
animal model
animal tissue
article
body fluid
conjugate
controlled study
fetus
newborn
nonhuman
priority journal
serum
sheep

*thyroidectomy*
tissue distribution
Drug Descriptors:
*iodothyronine: EC, endogenous compound
*liothyronine: EC, endogenous compound
*sulfate: EC, endogenous compound
*thyroxine: EC, endogenous compound
CAS REGISTRY NO.: (iodothyronine) 29354-16-3; (liothyronine) 6138-47-2, 6893-02-3; (sulfate) 14808-79-8; (thyroxine) 7488-70-2

L88 ANSWER 62 OF 63 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 1993:430440 BIOSIS Full-text
DOCUMENT NUMBER: PREV199396085065
TITLE: Gli, a zinc finger transcription factor and oncogene, is expressed during normal mouse development.
AUTHOR(S): Walterhouse, David; Ahmed, Maqbool; Slusarski, Diane; Kalamaras, Julie; Boucher, Diane; Holmgren, Robert; Iannaccone, Philip [Reprint author]
CORPORATE SOURCE: Markey Program Dev. Biol., T239, Northwest. Univ., 303 E. Chicago Ave., Chicago, IL 60611, USA
SOURCE: Developmental Dynamics, (1993) Vol. 196, No. 2, pp. 91-102. CODEN: DEDYEI. ISSN: 1058-8388.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 22 Sep 1993
Last Updated on STN: 22 Sep 1993
ABSTRACT:The oncogene GLI is amplified and expressed in some cases of human malignant glioma and undifferentiated childhood sarcoma and is the prototype for a gene family characterized by a highly conserved set of five tandem zinc fingers and a consensus cysteine-histidine link. This zinc finger motif has been shown to bind DNA with sequence specificity and may mediate transcriptional regulation. Since GLI is expressed in embryonal carcinoma cell lines but not in most normal adult tissues and shows significant sequence similarity within its zinc finger domain to cubitus interruptus dominant (ci-D), a Drosophila segmentation gene known to be important in the morphogenesis of the posterior portion of each larval segment, we established the temporal and tissue expression patterns of the mouse homologue of human GLI in day 10 through 18 mouse embryos with Northern blotting, reverse transcriptase coupled PCR, and in situ hybridization. gli transcripts were demonstrated on days 10 through 18 of mouse embryonic development was well as in normal adult uterus, brain, testis, and limb. Tissue expression of gli during gestation was demonstrated in Meckel's precartilage mesenchyme, the basis occipitus, rib mesenchymal condensations, primordial vertebral bodies, digital mesenchymal condensations in forefoot and hindfoot plates, the ependymal layer of the spinal cord, and the mesoderm of the gastrointestinal tract. Expression persisted throughout gestation in developing bone and cartilage of the extremities, the ribs, and the vertebral bodies, as well as the gastrointestinal tract mesoderm. These findings support a role for gli family genes in normal craniofacial and digital development in mammals first suggested by the demonstration of translocation breakpoints within the GL13 gene in families with the Greig cephalopolysyndactyly syndrome and subsequently by reduced gli3 expression in the mouse mutant extra toes. It is surprising that a single gene would be expressed in such a wide range of mesenchymal structures.
CONCEPT CODE: Genetics - Animal 03506
Replication, transcription, translation 10300
Chordate body regions - Head 11304
Chordate body regions - Facial 11306
Chordate body regions - Extremities 11318

Digestive system - Physiology and biochemistry 14004
Bones, joints, fasciae, connective and adipose tissue - Physiology and biochemistry 18004
Neoplasms - Carcinogens and carcinogenesis 24007
Development and Embryology - General and descriptive 25502

INDEX TERMS: Major Concepts
Development; Genetics; Molecular Genetics (Biochemistry and Molecular Biophysics); Skeletal System (Movement and Support); Tumor Biology

INDEX TERMS: Miscellaneous Descriptors
AMNIOTIC FLUID; MECONIUM; SERUM; THYROID HORMONE METABOLISM; ***THYROIDECTOMY***; THYROXINE SULFATE; 3 3' 5=***TRIIODOTHYRONINE SULFATE***

ORGANISM: Classifier
Muridae 86375
Super Taxa
Rodentia; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
Muridae
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Rodents, Vertebrates

L88 ANSWER 63 OF 63 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

ACCESSION NUMBER: 1993:159008 BIOSIS Full-text
DOCUMENT NUMBER: PREV199344077808
TITLE: Evidence for thyromimetic effects of 3,5,3'-***triiodothyronine sulfate*** (T3S) in ***hypothyroid*** rats.
AUTHOR(S): Santini, F.; Hurd, R. E.; Lee, B.; Chopra, I. J.
CORPORATE SOURCE: UCLA Sch. Med., Los Angeles, CA, USA
SOURCE: Clinical Research, (1993) Vol. 41, No. 1, pp. 84A.
Meeting Info.: Joint Meeting of the Western Society for Clinical Investigation, Western Section American Federation for Clinical Research, Western Society for Pediatric Research, Western Region Society for Investigative Dermatology, and the Western Student Medical Research Committee. Carmel, California, USA. February 17-20, 1993.
CODEN: CLREAS. ISSN: 0009-9279.
DOCUMENT TYPE: Conference; (Meeting)
LANGUAGE: English
ENTRY DATE: Entered STN: 19 Mar 1993
Last Updated on STN: 19 Mar 1993
CONCEPT CODE: General biology - Symposia, transactions and proceedings 00520
Biochemistry studies - General 10060
Metabolism - Metabolic disorders 13020
Endocrine - Thyroid 17018

INDEX TERMS: Major Concepts
Endocrine System (Chemical Coordination and Homeostasis); Metabolism

INDEX TERMS: Miscellaneous Descriptors
ABSTRACT

ORGANISM: Classifier
Muridae 86375
Super Taxa
Rodentia; Mammalia; Vertebrata; Chordata; Animalia
Organism Name

Muridae

Taxa Notes

Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Rodents, Vertebrates